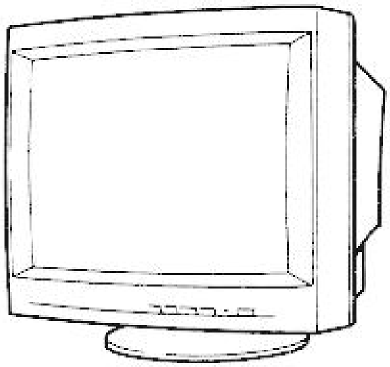
ORDER NO. FTD970305350

Service Manual

Multi-Scan Color CRT Display
MODEL P815 (TX-D2171V)
Chassis No. GV3
Chassis Family No.21GV3



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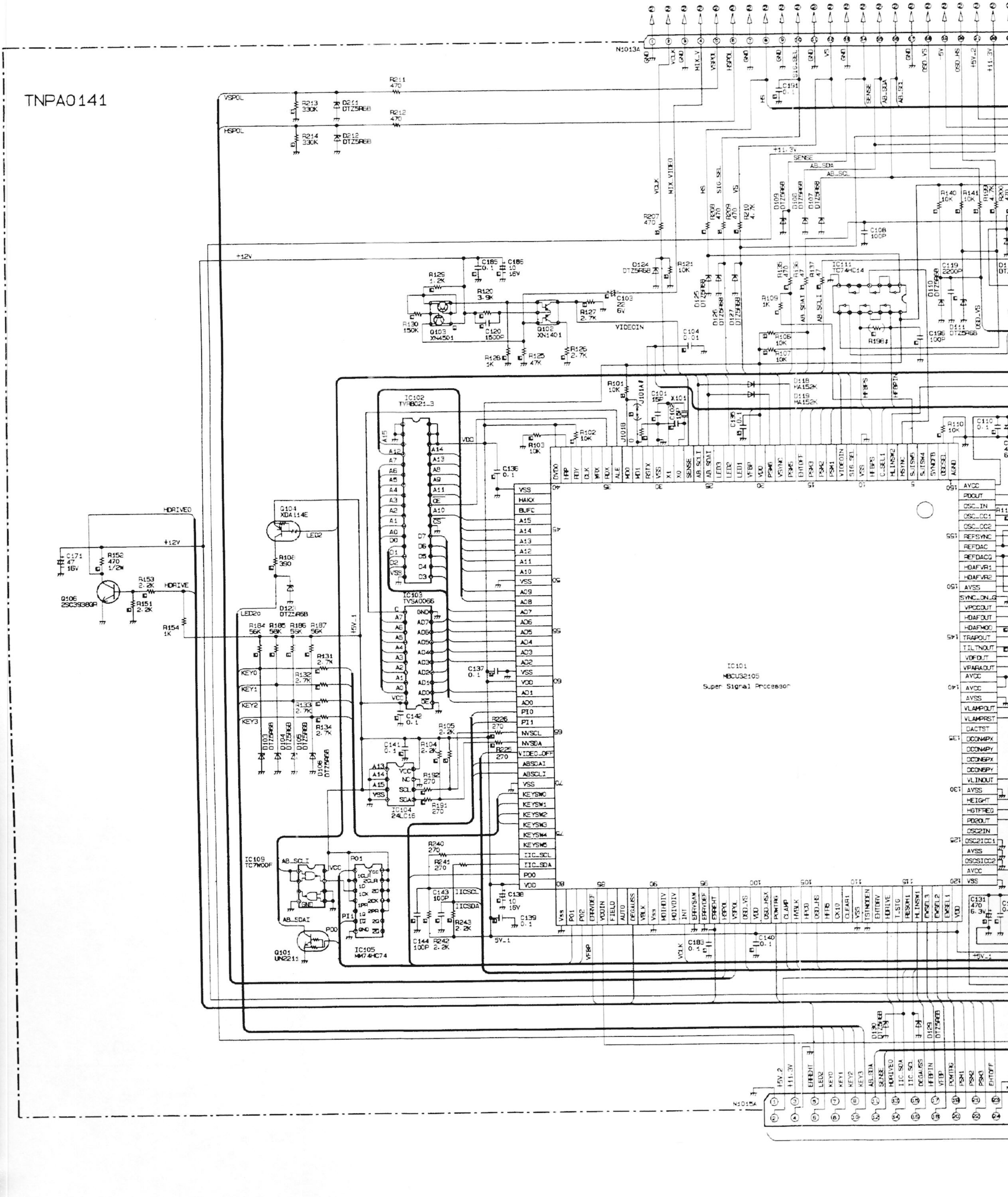
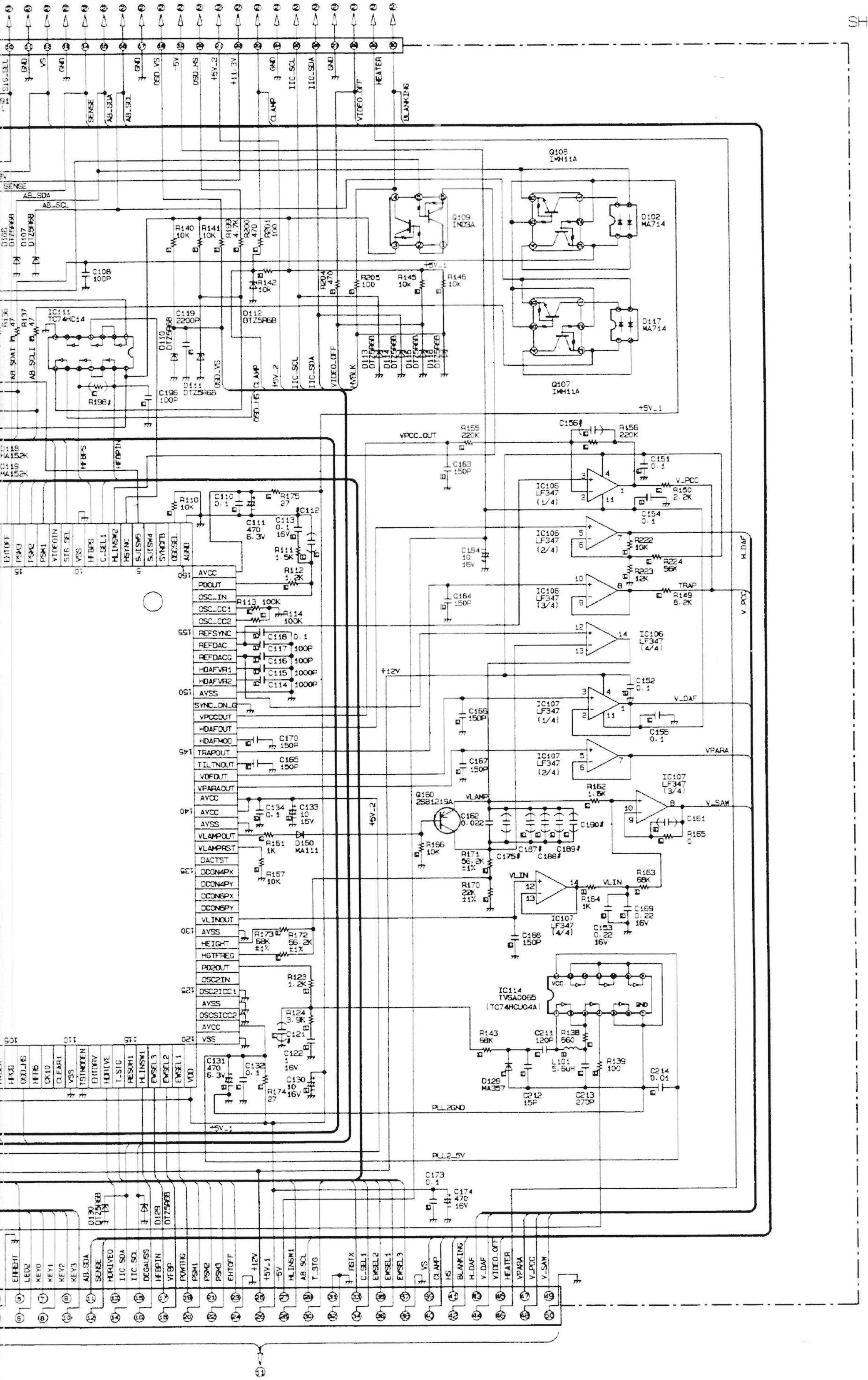
ViewSonic

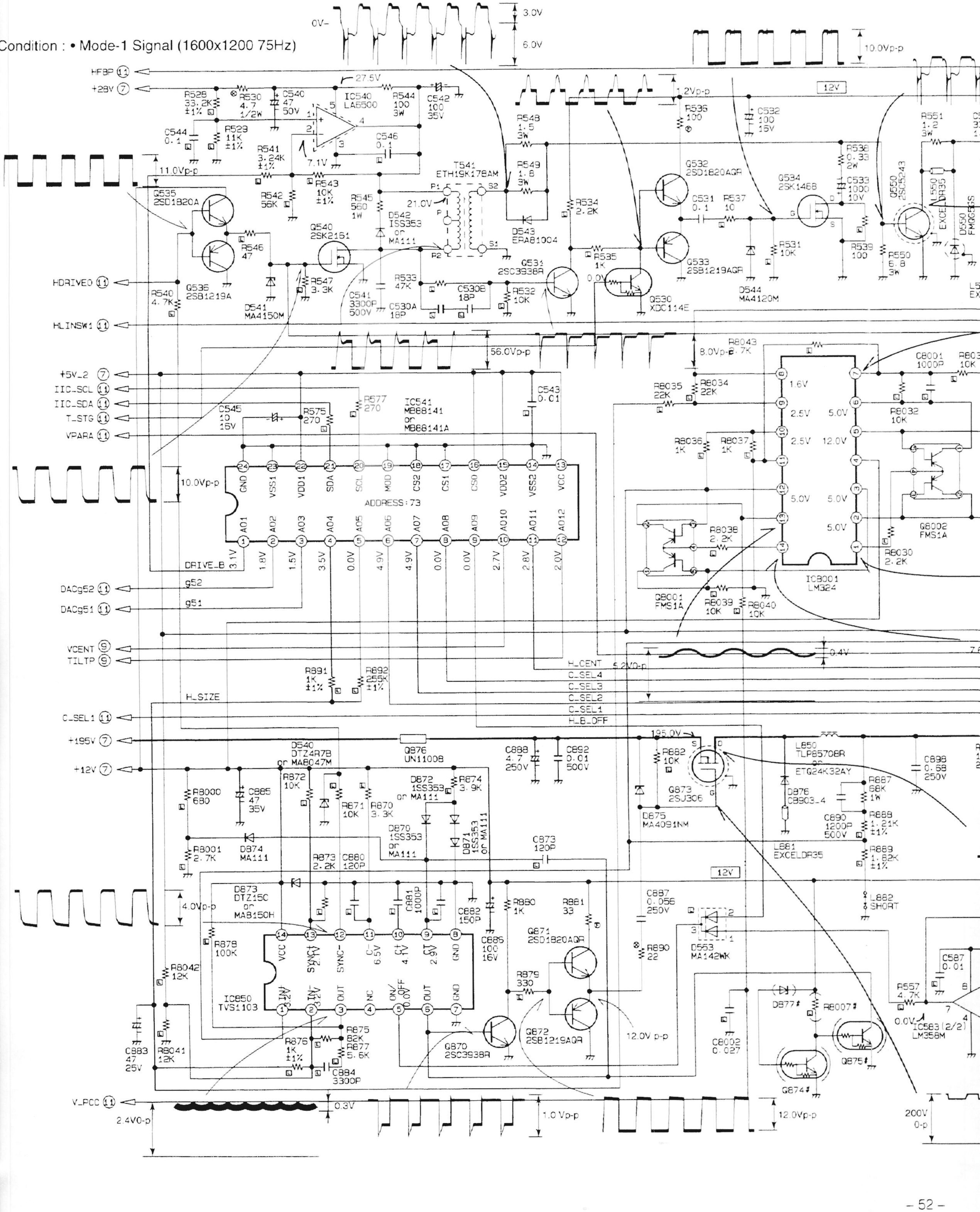

TNPA0141
N1013A
GND
VCLK
HIX_V
VSPOL
HSPOL
SIG.SEL
VS
OSD.VS
OSD.HS
+5V.2
+11.3V
-5V
SENSE
AB.SDA
AB.SCL
HS
C191 0.1
+11.3V
R211 470
R212 470
R213 330K
R214 330K
D211 DTZ5R6B
D212 DTZ5R6B
VSPOL
HSPOL
+12V
VCLK
MIX VIDEO
R207 470
R208 470
R209 470
R210 4.7K
D109 DTZ5R6B
D108 DTZ5R6B
D107 DTZ5R6B
R140 10K
R141 10K
R199 4.7K
R200 470
C108 100P
R121 10K
D124 DTZ5R6B
C185 0.1
C186 10 16V
R129 1.2K
R120 3.9K
R130 150K
Q103 XN4501
C120 1500P
Q102 XN1401
R127 2.7K
C103 22 6V
VIDEOIN
R126 1K
R125 47K
R128 2.7K
C104 0.01
D125 DTZ5R6B
D126 DTZ5R6B
D127 DTZ5R6B
R135 470
R136 47
R137 47
R109 1K
IC111 TC74HC14
AB.SDAI
AB.SCLI
R106 10K
R107 10K
R198
C119 2200P
D110 DTZ5R6B
D111 DTZ5R6B
C196 100P
OSD.VS
R101 10K
J101A
C101 15P
X101
C102
J101B
D118 MA152K
D119 MA152K
HFBPS
HFBPIN
C135 0.1
R110 10K
C110 0.1
IC102 TYR8021_3
A15 A12 A7 A6 A5 A4 A3 A2 A1 A0
D0 D1 D2 D3 D4 D5 D6 D7
VSS
A14 A13 A8 A9 A11 OE A10 CS
VDD
R102 10K
R103 10K
C136 0.1
IC103 TVSA0066
GND
AD7 AD6 AD5 AD4 AD3 AD2 AD1 AD0
OE
VCC
C137 0.1
C142 0.1
C141 0.1
R104 2.2K
R105 2.2K
R226 270
R225 270
R192 270
R191 270
IC104 24LC16
A13 A14 A15 VSS VCC NC SCL SDA
HDRIVEO
Q104 XDA114E
LED2
C171 47 16V
R152 470 1/2W
+12V
R108 390
R153 2.2K
HDRIVE
Q106 2SC3938OR
R151 2.2K
D123 DTZ5R6B
R154 1K
LED20
R184 56K
R185 56K
R186 56K
R187 56K
5V_1
R131 2.7K
R132 2.7K
R133 2.7K
R134 2.7K
KEY0
KEY1
KEY2
KEY3
D103 DTZ5R6B
D104 DTZ5R6B
D105 DTZ5R6B
D106 DTZ5R6B
IC109 TC7W00F
AB_SCLI
AB_SDAI
Q101 UN2211
P00
P01
PI1
IC105 MM74HC74
R240 270
R241 270
C143 100P
IICSCL
IICSDA
R243 2.2K
C144 100P
R242 2.2K
C138 10 16V
C139 0.1
5V_1
IC101
MBCU32105
Super Signal Processor
DVDD HRP RDY CLK MTX RDX ALE MD0 MD1 RSTX VSS X1 X0 SENSE AB.SCLI AB.SDAI LED3 LED2 LED1 VFBP VDD PSW6 VSYNC PSW5 EHTOFF PSW3 PSW2 PSW1 VIDEOIN SIG.SEL VSS HFBPS C.SEL1 HLINSW2 HSYNC S.JISW5 S.JISW4 SYNOFB OSCSEL1 AGND
VSS HAKX BUFC A15 A14 A13 A12 A11 A10 VSS AD9 AD8 AD7 AD6 AD5 AD4 AD3 AD2 VSS VDD AD1 AD0 PI0 PI1 NVSCL NVSDA VIDEO_OFF ABSDAI ABSCLI VSS KEYSW0 KEYSW1 KEYSW2 KEYSW3 KEYSW4 KEYSW5 IIC_SCL IIC_SDA P00 VDD
Vss P01 P02 ERRVDEF VDOIN FIELD AUTO DEGAUSS VBLK Vss HDIHDIV HDIVDIV INT ERRYSAW ERRDEF ERRHEHT HSPOL VSPOL OSD_VS VDD OSD_HSX POWTRG CLAMP HVBLK OSD_HS HFPB CX10 CLEAR1 VSS TSTMODEN EHTDRV HDRIVE T.SIG RESOH1 HLINSW1 EWSEL3 EWSEL2 EWSEL1 VDD
AVCC PDOUT OSC_IN OSC_CC1 OSC_CC2 REFSYNC REFDAC REFDACG HDAFVR1 HDAFVR2 AVSS SYNC_ON_G VPCCOUT HDAFOUT HDAFMOD TRAPOUT TILTNOUT VDFOUT VPARAOUT AVCC AVCC AVSS VLAMPOUT VLAMPRST DACTST DCON4PX DCON4PY DCON5PX DCON5PY VLINOUT AVSS HEIGHT HGTFREQ PD2OUT OSC2IN OSC2ICC1 AVSS OSCSICC2 AVCC VSS
40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 35 30 25 20 15 10 5 160
C131 470 6.3V
+5V_1
VFBP
VCLK
C183 0.1
C140 0.1
D130 DTZ5R6B
D129 DTZ5R6B
N1015A
+5V.2
+11.3V
EHHDHT
LED2
KEY0
KEY1
KEY2
KEY3
AB.SDA
SENSE
HDRIVEO
IIC_SDA
IIC_SCL
DEGAUSS
HFBPIN
VFBP
POWTRG
PSW1
PSW2
PSW3
EHTOFF

SHEET ④

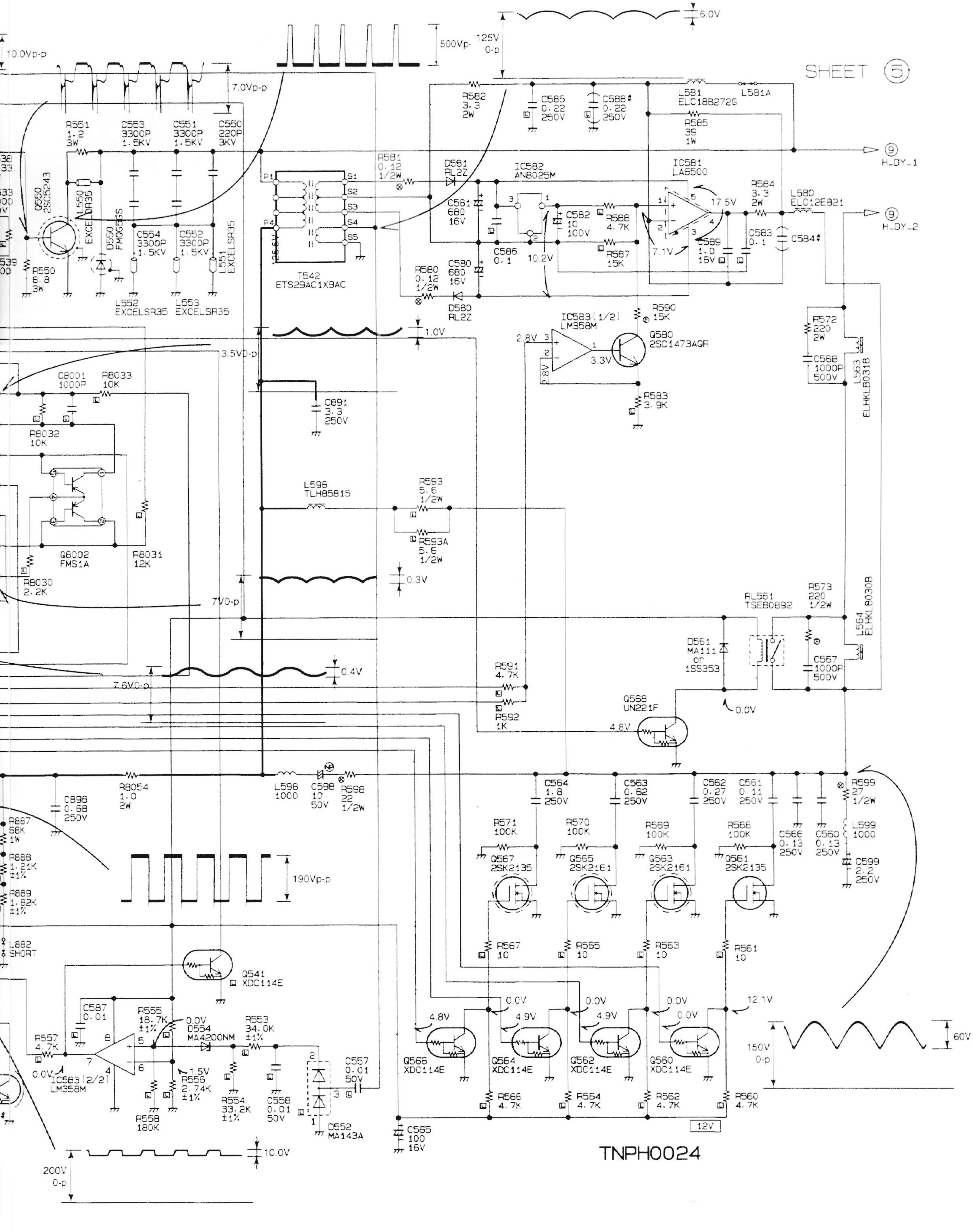


SIG_SEL
GND
VS
GND
SENSE
AB_SDA
AB_SCL
GND
OSD_VS
-5V
OSD_HS
+5V_2
+11.3V
GND
CLAMP
IIC_SCL
IIC_SDA
GND
VIDEO_OFF
HEATER
BLANKING
Q108
IMH11A
Q109
IND3A
D102
MA714
D117
MA714
Q107
IMH11A
R140 10K
R141 10K
R199 4.7K
R200 470
R201 100
C108 100P
R142 10K
D112 DTZ5R6B
R204 470
R205 100
R145 10K
R146 10K
+5V_1
IC111
TC74HC14
R136 47
R137 47
AB_SDAI
AB_SCLI
D108 DTZ5R6B
D107 DTZ5R6B
C119 2200P
D110 DTZ5R6B
D111 DTZ5R6B
C196 100P
R196#
OSD_VS
CLAMP
+5V_2
IIC_SCL
IIC_SDA
VIDEO_OFF
VBLK
D113 DTZ5R6B
D114 DTZ5R6B
D115 DTZ5R6B
D116 DTZ5R6B
D118 MA152K
D119 MA152K
HFBPS
HFBPIN
VPCC_OUT
R155 220K
C163 150P
C156#
R156 220K
C151 0.1
IC106 LF347 (1/4)
V_PCC
R150 2.2K
C154 0.1
IC106 LF347 (2/4)
R222 10K
R224 56K
R223 12K
IC106 LF347 (3/4)
TRAP
R149 8.2K
C184 10 16V
C164 150P
IC106 LF347 (4/4)
H_DAF
V_PCC
R110 10K
C110 0.1
R175 27
C112
C111 470 6.3V
C113 0.1 16V
R111 1.5K
R112 1.2K
R113 100K
R114 100K
C118 0.1
C117 100P
C116 100P
C115 1000P
C114 1000P
EHTOFF
PSM3
PSM2
PSM1
VIDEOIN
SIG_SEL
VSS
HFBPS
C_SEL1
H_LINSW2
HSYNC
SJISW5
SJISW4
SYNCPTB
OSDSEL
AGND
AVCC
PDOUT
OSC_IN
OSC_CC1
OSC_CC2
REFSYNC
REFDAC
REFDACG
HDAFVR1
HDAFVR2
AVSS
SYNC_ON_G
VPCCOUT
HDAFOUT
HDAFMOD
TRAPOUT
TILTNOUT
VDFOUT
VPARAOUT
AVCC
AVCC
AVSS
VLAMPOUT
VLAMPRST
DACTST
DCON4PX
DCON4PY
DCON6PX
DCON6PY
VLINOUT
AVSS
HEIGHT
HGTFREQ
PD2OUT
OSC2IN
OSC2ICC1
AVSS
OSCSICC2
AVCC
VSS
C170 150P
C165 150P
+12V
C152 0.1
IC107 LF347 (1/4)
V_DAF
C166 150P
C155 0.1
IC107 LF347 (2/4)
VPARA
C167 150P
IC107 LF347 (3/4)
V_SAW
C134 0.1
C133 10 16V
+5V_2
Q150 2SB1219A
VLAMP
C162 0.022
R162 1.5K
C161
R165 0
C190#
R151 1K
D150 MA111
R166 10K
R171 56.2K ±1%
C175#
C187#
C188#
C189#
R157 10K
R170 22K ±1%
VLIN
IC107 LF347 (4/4)
R153 68K
VLIN
R164 1K
C169 0.22 16V
C153 0.22 16V
C168 150P
R173 68K ±1%
R172 56.2K ±1%
R123 1.2K
R124 3.9K
C121
C122 1 16V
IC114 TVSA0065 (TC74HCU04A)
VCC
GND
R143 68K
C211 120P
R138 560
L101 5.6uH
R139 100
C214 0.01
D125 MA357
C212 15P
C213 270P
PLL2GND
HPCO
OSD_HS
HFB
CK10
CLEAR1
VSS
TSTNODEN
EHTDRV
HDRIVE
T_STG
RESOH1
H_LINSW1
EWSEL3
EWSEL2
EWSEL1
VDD
C131 470 6.3V
C132 0.1
R174 27
C130 10 16V
+5V_1
PLL2_5V
C173 0.1
C174 470 16V
D130 DTZ5R6B
D129 DTZ5R6B
EHHEHT
LED2
KEY0
KEY1
KEY2
KEY3
AB_SDA
SENSE
HDRIVEO
IIC_SDA
IIC_SCL
DEGAUSS
HFBPIN
VFBP
POWTNG
PSM1
PSM2
PSM3
EHTOFF
+12V
+5V_1
-5V
H_LINSW1
AB_SCL
T_STG
DSTX
C_SEL1
EWSEL2
EWSEL1
EWSEL3
VS
CLAMP
HS
BLANKING
H_DAF
V_DAF
VIDEO_OFF
HEATER
VPARA
V_PCC
V_SAW

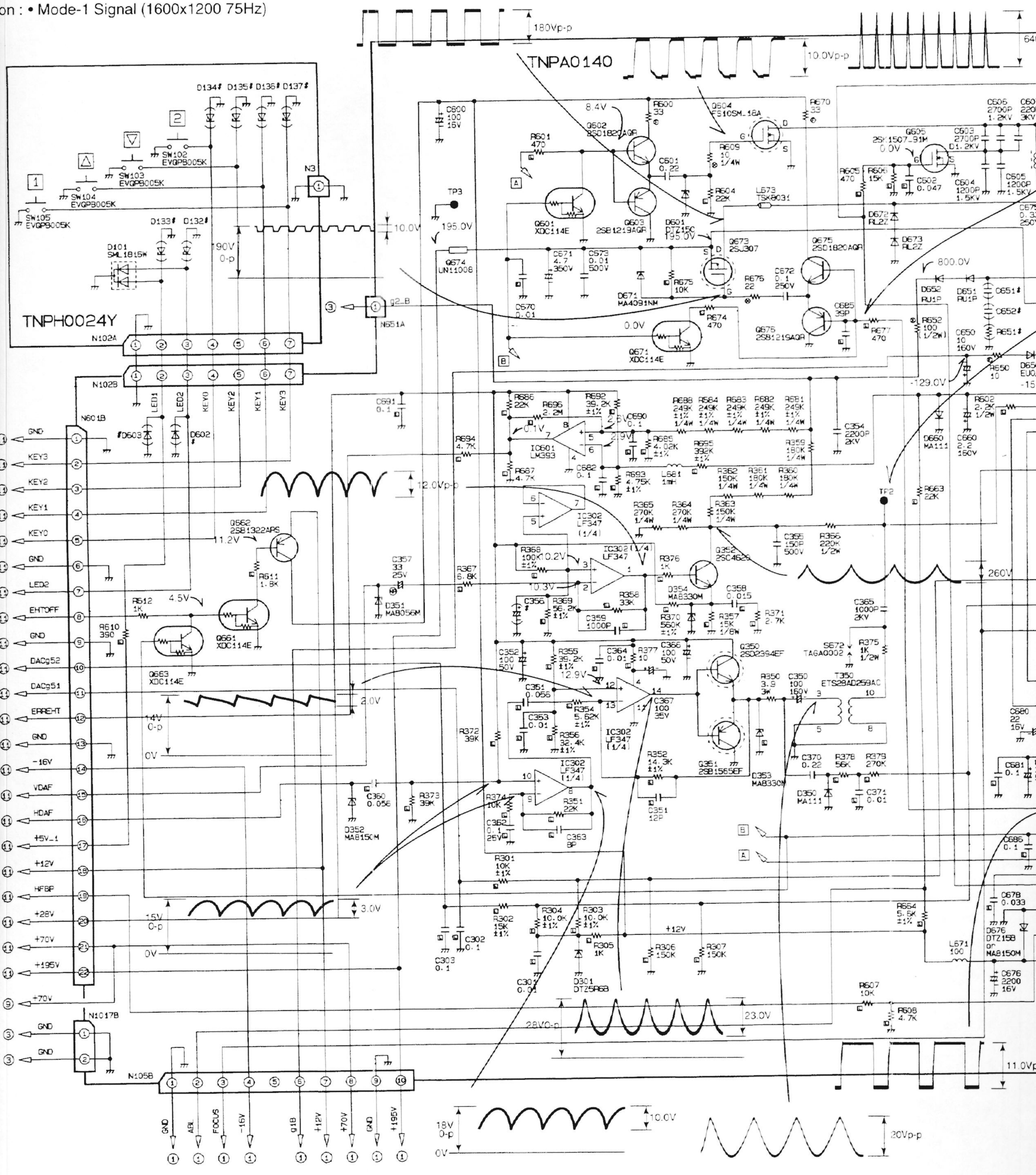
Condition : • Mode-1 Signal (1600x1200 75Hz)

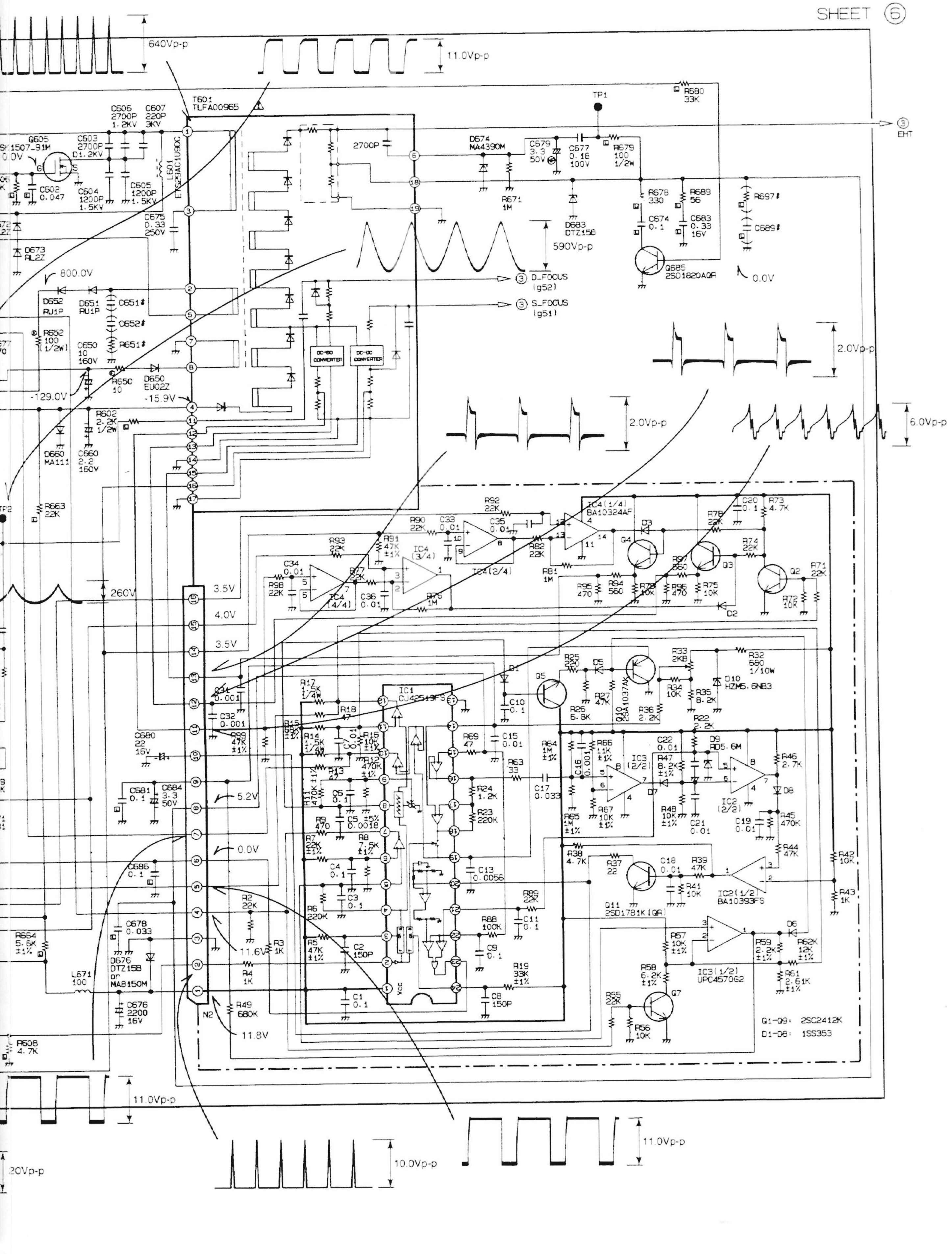


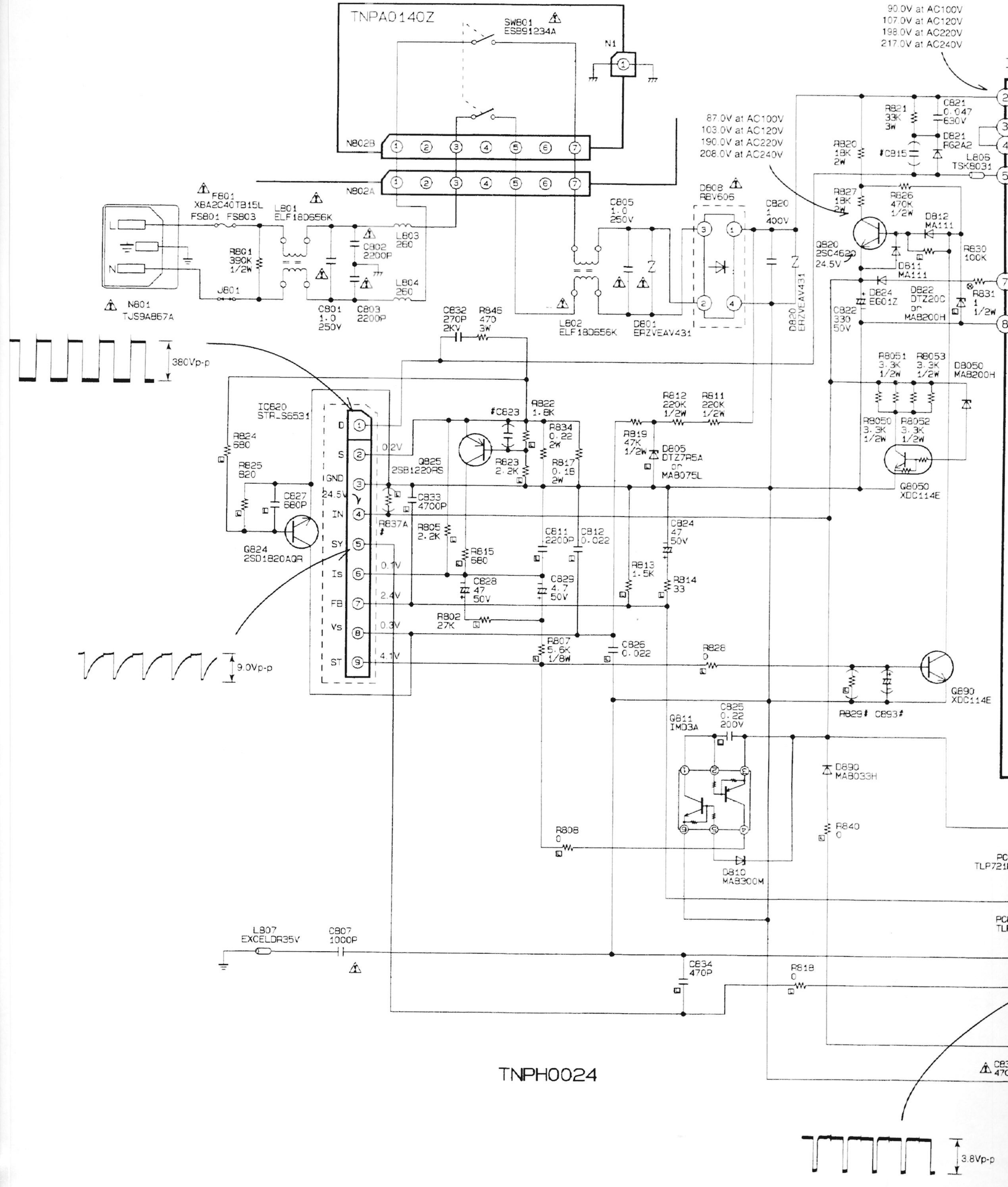
0V-
3.0V
6.0V
10.0Vp-p
HFBP ⑪
+28V ⑦
27.5V
R528 33.2K ±1%
R530 4.7 1/2W
C540 47 50V
IC540 LA6500
R544 100 3W
C542 100 35V
C544 0.1
R529 11K ±1%
C546 0.1
R541 3.24K ±1%
7.1V
11.0Vp-p
R543 10K ±1%
R542 56K
Q535 2SD1820A
Q536 2SB1219A
R546 47
HDRIVE0 ⑪
R540 4.7K
D541 MA4150M
R547 3.3K
Q540 2SK2161
R545 560 1W
D542 1SS353 or MA111
T541 ETH19K178AM
21.0V
P1
P2
S1
S2
C541 3300P 500V
C530A 18P
R533 47K
C530B 18P
R532 10K
R548 1.5 3W
R549 1.8 3W
D543 ERA81004
1.2Vp-p
R536 100
C532 100 16V
12V
R534 2.2K
Q531 2SC3938R
R535 1K
0.0V
Q530 XDC114E
Q532 2SD1820AQR
Q533 2SB1219AQR
C531 0.1
R537 10
R531 10K
D544 MA4120M
Q534 2SK1468
R538 0.33 2W
C533 1000 10V
R539 100
R550 6.8 3W
R551 1.2 3W
Q550 2SC5243
L550 EXCELDR35
D550 FMQG5GS
HLINSW1 ⑪
56.0Vp-p
8.0Vp-p
R8043 4.7K
+5V_2 ⑦
IIC_SCL ⑪
IIC_SDA ⑪
T_STG ⑪
VPARA ⑪
C545 10 16V
R575 270
R577 270
IC541 MB88141 or MB88141A
C543 0.01
GND VSS1 VDD1 SDA SCL MOD CS2 CS1 CS0 VDD2 VSS2 VCC
ADDRESS:73
AO1 AO2 AO3 AO4 AO5 AO6 AO7 AO8 AO9 AO10 AO11 AO12
10.0Vp-p
DRIVE_B
3.1V 1.8V 1.5V 3.5V 0.0V 4.9V 4.9V 0.0V 0.0V 2.7V 2.8V 2.0V
g52
g51
DACg52 ⑪
DACg51 ⑪
R8035 22K
R8034 22K
R8036 1K
R8037 1K
1.6V
2.5V
2.5V
5.0V
5.0V
12.0V
5.0V
5.0V
C8001 1000P
R8032 10K
Q8002 FMS1A
R8030 2.2K
IC8001 LM324
R8038 2.2K
Q8001 FMS1A
R8039 10K
R8040 10K
VCENT ⑨
TILTP ⑨
0.4V
5.2V0-p
R891 1K ±1%
R892 255K ±1%
H_CENT
C_SEL4
C_SEL3
C_SEL2
C_SEL1
H_B_OFF
H_SIZE
C_SEL1 ⑪
+195V ⑦
+12V ⑦
195.0V
D540 DTZ4R7B or MA8047M
Q876 UN1100B
C888 4.7 250V
C892 0.01 500V
R882 10K
Q873 2SJ306
D875 MA4091NM
D876 CB903_4
L850 TLP85708R or ETG24K32AY
C898 0.68 250V
R887 68K 1W
C890 1200P 500V
R888 1.21K ±1%
R889 1.82K ±1%
L881 EXCELDR35
L882 SHORT
R8000 680
C885 47 35V
R872 10K
D872 1SS353 or MA111
R874 3.9K
R871 10K
R870 3.3K
D870 1SS353 or MA111
D871 1SS353 or MA111
R8001 2.7K
D874 MA111
R873 2.2K
C880 120P
C873 120P
12V
C887 0.056 250V
R890 22
D553 MA142WK
4.0Vp-p
D873 DTZ15C or MA8150H
C881 1000P
C882 150P
C886 100 16V
R880 1K
R881 33
R878 100K
VCC SYNC+ SYNC- C- C+ CT GND
2.1V 6.5V 4.1V 2.9V
IN+ IN- OUT NC ON/OFF OUT GND
3.2V 3.2V 0.0V
IC850 TVS1103
Q871 2SD1820AQR
Q872 2SB1219AQR
R879 330
Q870 2SC3938R
12.0V p-p
R8042 12K
R8041 12K
C883 47 25V
R875 82K
R876 1K ±1%
R877 5.6K
C884 3300P
C8002 0.027
D877#
R8007#
Q874#
Q875#
R557 4.7K
C587 0.01
0.0V
IC583(2/2) LM358M
V_PCC ⑪
2.4V0-p
0.3V
1.0 Vp-p
12.0Vp-p
200V 0-p


SHEET ⑤
10.0Vp-p
500Vp-p
125V 0-p
6.0V
7.0Vp-p
R551 1.2 3W
C553 3300P 1.5KV
C551 3300P 1.5KV
C550 220P 3KV
R582 3.3 2W
C585 0.22 250V
C588# 0.22 250V
L581 ELC18B272G
L581A
R585 39 1W
⑨ H_DY_1
Q550 2SC5243
L550 EXCELDR35
D550 FMQG5GS
C554 3300P 1.5KV
C552 3300P 1.5KV
L551 EXCELSR35
R550 6.8 3W
L552 EXCELSR35
L553 EXCELSR35
P1 P4 S1 S2 S3 S4 S5
125.6V
T542 ETS29AC1X9AC
R581 0.12 1/2W
D581 RL2Z
IC582 AN8025M
IC581 LA6500
C581 680 16V
C582 10 100V
R586 4.7K
R587 15K
C586 0.1
10.2V
7.1V
17.5V
R584 3.3 2W
L580 ELC12E821
⑨ H_DY_2
C589 1.0 16V
C583 0.1
C584#
R580 0.12 1/2W
C580 680 16V
D580 RL2Z
R590 15K
IC583(1/2) LM358M
2.8V
3.3V
0.8V
Q580 2SC1473AQR
R583 3.9K
R572 220 2W
C568 1000P 500V
L563 ELHKLB031B
1.0V
3.5V0-p
C8001 1000P
R8033 10K
R8032 10K
C891 3.3 250V
L596 TLH85815
R593 5.6 1/2W
R593A 5.6 1/2W
Q8002 FMS1A
R8031 12K
R8030 2.2K
0.3V
7V0-p
RL561 TSE80892
R573 220 1/2W
L564 ELHKLB030B
D561 MA111 or 1SS353
C567 1000P 500V
0.4V
7.6V0-p
R591 4.7K
R592 1K
Q568 UN221F
4.8V
0.0V
R8054 1.0 2W
L598 1000
C598 10 50V
R598 22 1/2W
C564 1.8 250V
C563 0.62 250V
C562 0.27 250V
C561 0.11 250V
R599 27 1/2W
C898 0.68 250V
R887 68K 1W
R888 1.21K ±1%
R889 1.82K ±1%
190Vp-p
R571 100K
R570 100K
R569 100K
R568 100K
C566 0.13 250V
C560 0.13 250V
L599 1000
C599 2.2 250V
Q567 2SK2135
Q565 2SK2161
Q563 2SK2161
Q561 2SK2135
L882 SHORT
Q541 XDC114E
R567 10
R565 10
R563 10
R561 10
C587 0.01
R555 16.7K ±1%
0.0V
D554 MA4200NM
R553 34.0K ±1%
0.0V
0.0V
0.0V
12.1V
4.9V
4.9V
0.0V
4.8V
R557 4.7K
1.5V
R556 2.74K ±1%
C557 0.01 50V
Q566 XDC114E
Q564 XDC114E
Q562 XDC114E
Q560 XDC114E
150V 0-p
60V
0.0V
IC583(2/2) LM358M
R554 33.2K ±1%
C556 0.01 50V
R566 4.7K
R564 4.7K
R562 4.7K
R560 4.7K
R558 180K
D552 MA143A
C565 100 16V
12V
TNPH0024
10.0V
200V 0-p

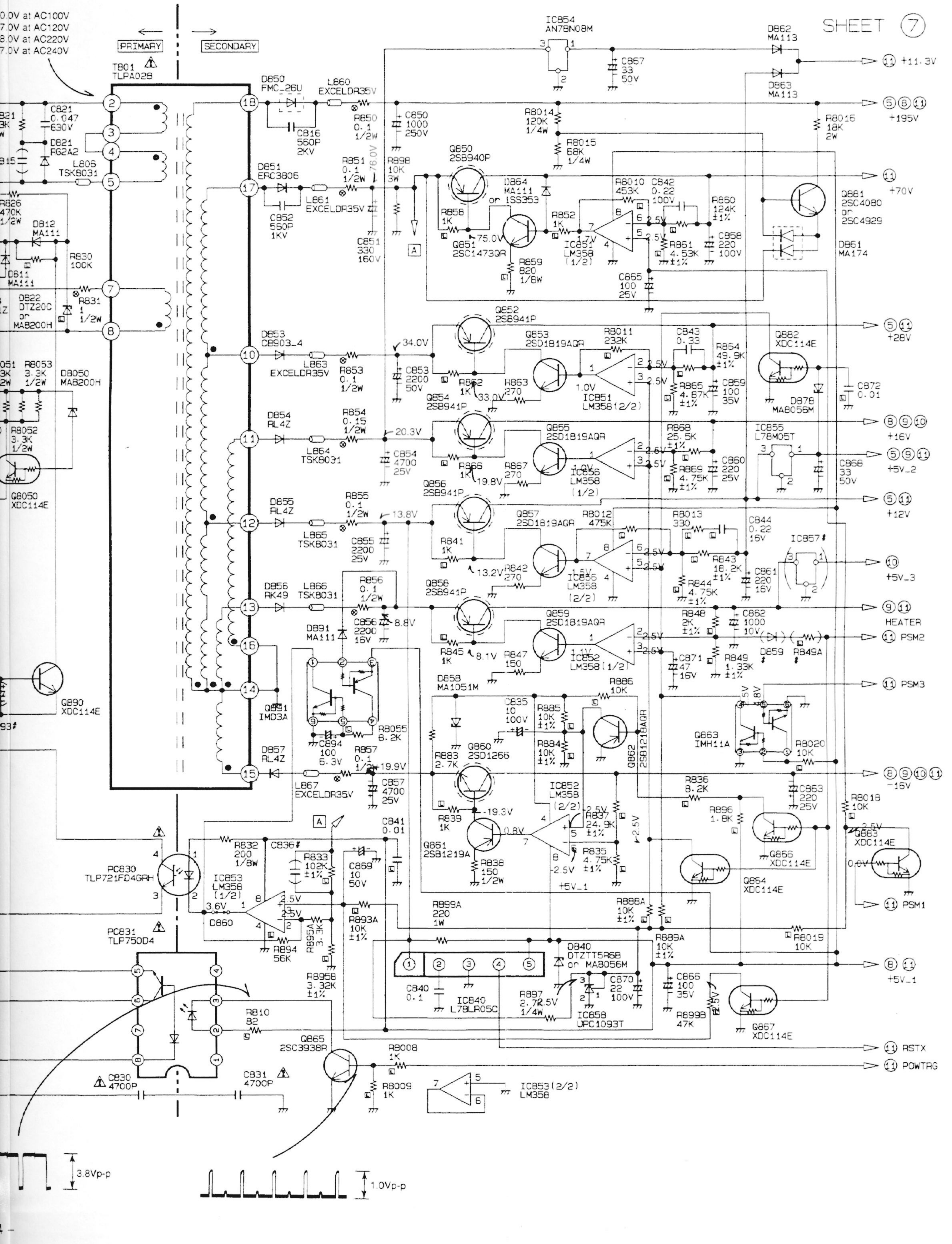
ion : • Mode-1 Signal (1600x1200 75Hz)


180Vp-p
10.0Vp-p
TNPA0140
TNPH0024Y
D134 D135 D136 D137
SW102 EVQPB005K
SW103 EVQPB005K
SW104 EVQPB005K
SW105 EVQPB005K
N3
D133 D132
D101 SML1815W
190V 0-p
10.0V
N102A
N102B
LED1 LED2 KEY0 KEY2 KEY1 KEY3
N601B
GND
KEY3
KEY2
KEY1
KEY0
GND
LED2
EHTOFF
GND
DACg52
DACg51
ERREHT
GND
-16V
VDAF
HDAF
+5V_1
+12V
HFBP
+28V
+70V
+195V
+70V
N1017B
GND
GND
N105B
GND ABL FOCUS -16V g1B +12V +70V GND +195V
D603 D602
Q562 2SB1322ARS
11.2V
R611 1.8K
R612 1K
4.5V
R610 390
Q661 XDC114E
Q663 XDC114E
12.0Vp-p
14V 0-p
0V
2.0V
15V 0-p
3.0V
0V
TP3
195.0V
Q674 UN11008
N651A
g2_B
C600 100 16V
R601 470
8.4V
Q602 2SD1820AQR
R600 33
Q601 XDC114E
Q603 2SB1219AQR
C601 0.22
D601 DTZ15C
195.0V
R604 22K
Q604 FS10SM_18A
R609 10 1/4W
L573 TSK8031
R670 33
Q673 2SJ307
C671 4.7 350V
C573 0.01 500V
D671 MA4091NM
R675 10K
R676 22
C672 0.1 250V
Q675 2SD1820AQR
Q676 2SB1219AQR
C685 39P
R674 470
R677 470
C670 0.01
0.0V
Q671 XDC114E
Q605 2SK1507_91M
0.0V
R605 470
R606 15K
C602 0.047
C603 2700P D1.2KV
C604 1200P 1.5KV
C605 2700P 1.2KV
C605 1200P 1.5KV
D672 RL2Z
D673 RL2Z
800.0V
D652 RU1P
D651 RU1P
C651
C652
R651
R652 100 1/2W
C650 10 160V
R650 10
-129.0V
R602 2.2K 1/2W
D660 MA111
C660 2.2 160V
R663 22K
TP2
C691 0.1
R686 22K
R696 2.2M
R692 39.2K ±1%
2.6V
C690 0.1
0.1V
IC601 LM393
2.9V
R685 4.02K ±1%
R694 4.7K
R687 4.7K
C682 0.1
R693 4.75K ±1%
L681 1mH
R688 249K ±1% 1/4W
R684 249K ±1% 1/4W
R683 249K ±1% 1/4W
R682 249K ±1% 1/4W
R681 249K ±1% 1/4W
R695 392K ±1%
R359 180K 1/4W
C354 2200P 2KV
R362 150K 1/4W
R361 180K 1/4W
R360 180K 1/4W
IC302 LF347 (1/4)
R365 270K 1/4W
R364 270K 1/4W
R363 150K 1/4W
C355 150P 500V
R356 220K 1/2W
R368 100K ±1%
10.2V
10.3V
IC302 (1/4) LF347
R376 1K
Q352 2SC4626
C357 33 25V
D351 MA8056M
R367 6.8K
C356
R369 56.2K ±1%
R358 33K
C359 1000P
D354 MA8330M
R370 560K ±1%
R357 15K 1/8W
C358 0.015
R371 2.7K
C365 1000P 2KV
260V
C352 100 50V
R355 39.2K ±1%
C364 0.01
R377 10
C366 100 50V
12.9V
Q350 2SD2394EF
S672 TAGA0002
R375 1K 1/2W
C351 0.056
R354 5.62K ±1%
C353 0.01
R356 32.4K ±1%
IC302 LF347 (1/4)
C367 100 35V
R350 3.9 3W
C350 100 160V
T350 ETS28AD259AC
R372 39K
R352 14.3K ±1%
C361 12P
Q351 2SB1565EF
D353 MA8330M
C370 0.22
R378 56K
R379 270K
D350 MA111
C371 0.01
C360 0.056
R373 39K
D352 MA815KM
R374 10K
C362 0.1 25V
R351 22K
C363 8P
R301 10K ±1%
R302 15K ±1%
C302 0.1
C303 0.1
R304 10.0K ±1%
R303 10.0K ±1%
R305 1K
+12V
R306 150K
R307 150K
C301 0.01
D301 DTZ5R6B
28V0-p
23.0V
R607 10K
R608 4.7K
R654 5.6K ±1%
L671 100
C678 0.033
D676 DTZ15B or MA8150M
C676 2200 16V
C686 0.1
C681 0.1
C680 22 16V
11.0Vp
18V 0-p
0V
10.0V
20Vp-p
A
B


640Vp-p
11.0Vp-p
T601
TLFA00965
TP1
R680
33K
③ EHT
C606
2700P
1.2KV
C607
220P
3KV
Q605
2SK1507-91M
0.0V
C603
2700P
D1.2KV
C502
0.047
C604
1200P
1.5KV
C605
1200P
1.5KV
L601
ETS23AC1U90C
2700P
D674
MA4390M
C679
3.3
50V
C677
0.18
100V
R679
100
1/2W
R671
1M
R678
330
R689
56
R697
C689
C674
0.1
C683
0.33
16V
D683
DTZ15B
Q685
2SD1820AQR
0.0V
C675
0.33
250V
590Vp-p
③ D_FOCUS
(g52)
③ S_FOCUS
(g51)
D673
RL2Z
800.0V
D652
RU1P
D651
RU1P
C651
C652
R652
100
(1/2W)
C650
10
160V
R651
R650
10
D650
EU02Z
-15.9V
-129.0V
DC-DC CONVERTER
DC-DC CONVERTER
R602
2.2K
1/2W
D660
MA111
C660
2.2
160V
2.0Vp-p
2.0Vp-p
6.0Vp-p
TP2
R663
22K
260V
3.5V
4.0V
3.5V
R92
22K
C35
0.01
IC4(1/4)
BA10324AF
R90
22K
C33
0.01
R93
22K
R91
47K
±1%
IC4
(3/4)
R82
22K
IC4(2/4)
R81
1M
D3
G4
R76
22K
C20
0.1
R73
4.7K
R74
22K
R97
560
Q3
Q2
R71
22K
C34
0.01
R98
22K
R77
22K
IC4
(4/4)
C36
0.01
R76
1M
R95
470
R94
560
R79
10K
R96
470
R75
10K
D2
R72
10K
R25
22K
D5
R33
2KB
R32
560
1/10W
D10
HZM5.6NB3
D1
Q5
R27
47K
Q10
2SA1037AK
R34
10K
R35
8.2K
R36
2.2K
R26
6.8K
R22
2.2K
C34
0.001
C32
0.001
R17
1.5K
1/4W
R18
47
IC1
CJ42543FS
C10
0.1
R15
68K
±1%
R14
1.5K
1/4W
C7
0.01
R16
10K
±1%
R69
47
C15
0.01
R64
1M
±1%
C16
0.001
R66
11K
±1%
IC3
(2/2)
C22
0.01
D9
RD5.6M
R47
8.2K
±1%
R46
2.7K
R99
47K
±1%
R12
470K
±1%
R13
22
R11
470K
±1%
C6
0.1
R63
33
C17
0.033
R24
1.2K
R23
220K
R65
1M
±1%
R67
10K
±1%
D7
R48
10K
±1%
C21
0.01
IC2
(2/2)
D8
C19
0.01
R45
470K
R44
47K
C680
22
16V
C681
0.1
C684
3.3
50V
5.2V
R9
470
C5
±5%
0.0018
R7
22K
±1%
R8
7.5K
±1%
0.0V
C686
0.1
C4
0.1
C13
0.0056
R38
4.7K
R37
22
C18
0.01
R39
47K
R41
10K
R42
10K
R43
1K
IC2(1/2)
BA10393FS
Q11
2SD1781K(QR)
C3
0.1
R2
22K
R6
220K
R89
22K
R88
100K
C11
0.1
R654
5.6K
±1%
C678
0.033
D676
DTZ15B
or
MA8150M
11.6V
R3
1K
R5
47K
±1%
C2
150P
C9
0.1
R57
10K
±1%
D6
R59
2.2K
±1%
R62K
12K
±1%
R58
6.2K
±1%
IC3(1/2)
UPC4570G2
R61
2.61K
±1%
L671
100
R4
1K
R19
33K
±1%
C1
0.1
C8
150P
Vcc
C676
2200
16V
N2
R49
680K
R55
22K
Q7
R56
10K
Q1-Q9: 2SC2412K
D1-D8: 1SS353
11.8V
R608
4.7K
11.0Vp-p
20Vp-p
10.0Vp-p
11.0Vp-p

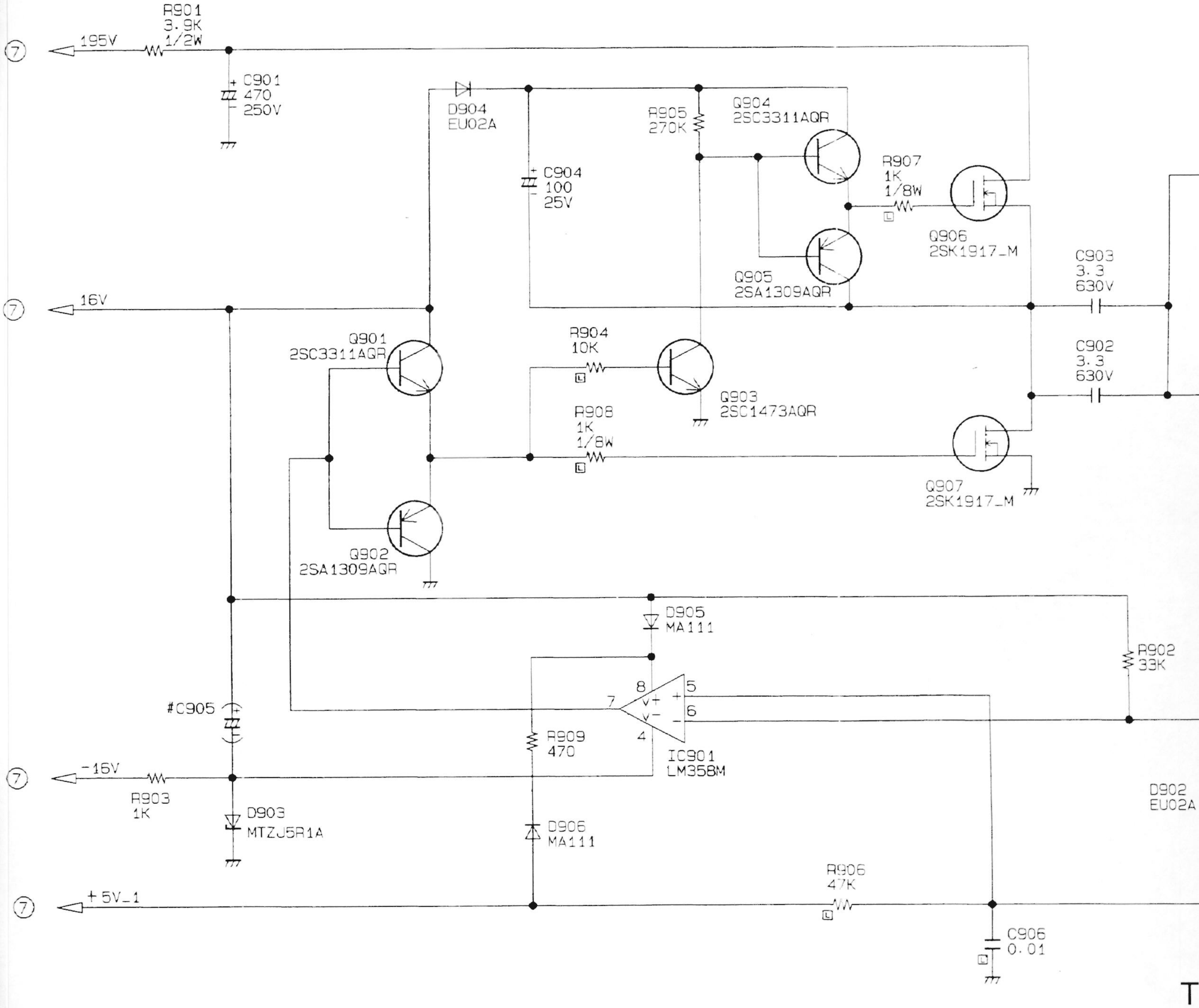

TNPA0140Z
SW801
ESB91234A
N1
N802B
N802A
F801
XBA2C40TB15L
FS801 FS803
L801
ELF18D656K
R801
390K
1/2W
J801
N801
TJS9A867A
C802
2200P
L803
260
L804
260
C801
1.0
250V
C803
2200P
C805
1.0
250V
L802
ELF18D656K
D801
ERZVEAV431
D808
RBV605
C820
1
400V
D820
ERZVEAV431
87.0V at AC100V
103.0V at AC120V
190.0V at AC220V
208.0V at AC240V
90.0V at AC100V
107.0V at AC120V
198.0V at AC220V
217.0V at AC240V
R821
33K
3W
C821
0.047
630V
D821
RG2A2
R820
18K
2W
#C815
L806
TSK8031
R827
18K
2W
R826
470K
1/2W
D812
MA111
Q820
2SC4620
24.5V
R830
100K
D811
MA111
D824
EG01Z
D822
DTZ20C
or
MA8200H
R831
1
1/2W
C822
330
50V
C832
270P
2KV
R846
470
3W
380Vp-p
R8051
3.3K
1/2W
R8053
3.3K
1/2W
D8050
MA8200H
R8050
3.3K
1/2W
R8052
3.3K
1/2W
Q8050
XDC114E
IC820
STR_S6531
D
S
GND
IN
SY
Is
FB
Vs
ST
0.2V
24.5V
0.1V
2.4V
0.3V
4.1V
R824
680
R825
820
C827
680P
Q824
2SD1820AQR
#C823
R822
1.8K
R834
0.22
2W
Q825
2SB1220RS
R823
2.2K
R817
0.18
2W
C833
4700P
R837A
#
R805
2.2K
R815
560
C828
47
50V
C811
2200P
C812
0.022
C829
4.7
50V
R802
27K
R807
5.6K
1/8W
C826
0.022
R812
220K
1/2W
R811
220K
1/2W
R819
47K
1/2W
D805
DTZ7R5A
or
MA8075L
C824
47
50V
R813
1.5K
R814
33
R828
0
Q890
XDC114E
R829# C893#
9.0Vp-p
Q811
IMD3A
C825
0.22
200V
D890
MA8033H
R840
0
R808
0
D810
MA8300M
PC
TLP721
PC
TL
L807
EXCELDR35V
C807
1000P
C834
470P
R818
0
C83
470
TNPH0024
3.8Vp-p

SHEET ⑦

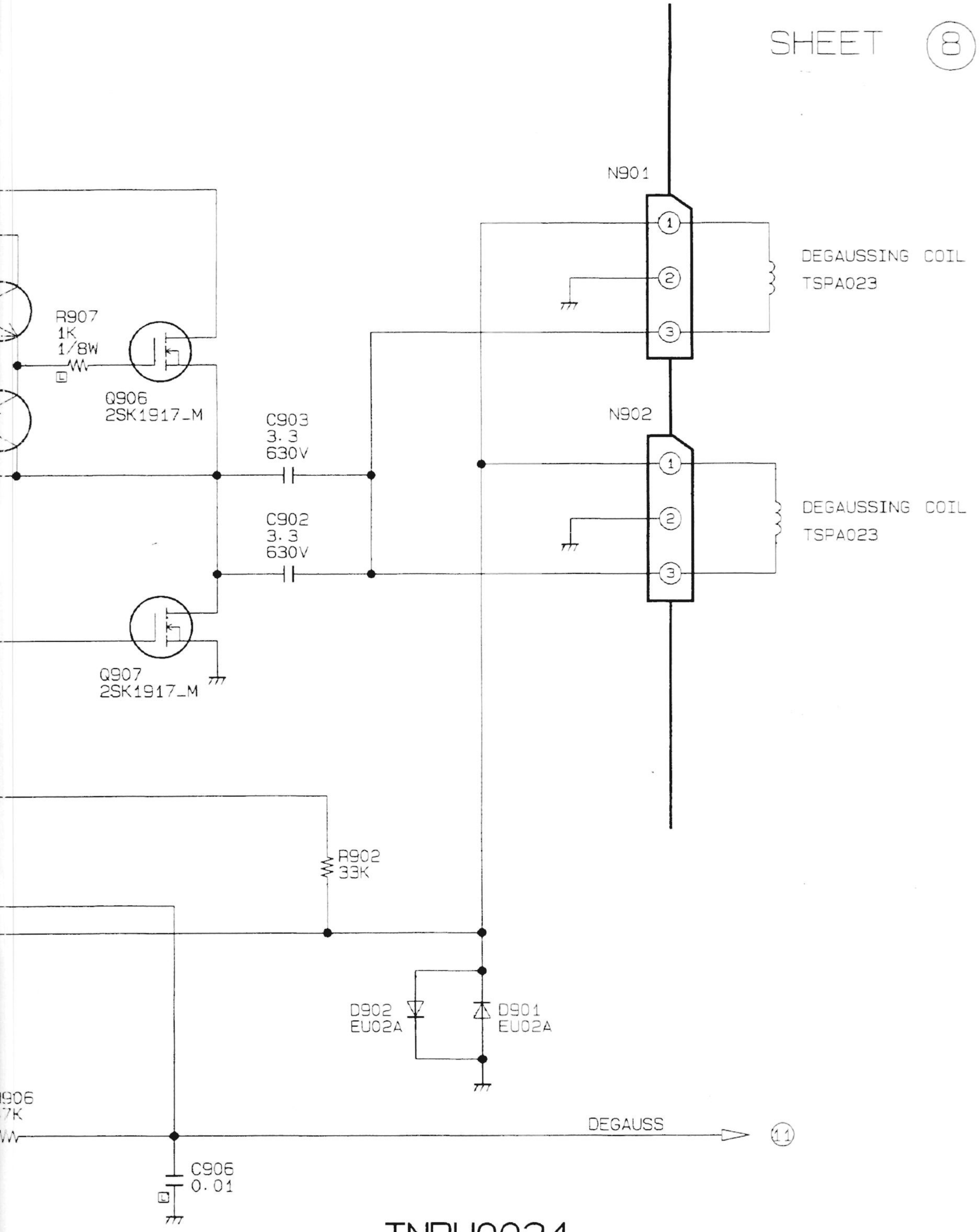


0.0V at AC100V
7.0V at AC120V
8.0V at AC220V
7.0V at AC240V
PRIMARY
SECONDARY
T801 TLPA028
C821 0.047 630V
D821 RG2A2
L805 TSK8031
R826 470K 1/2W
D812 MA111
R830 100K
D811 MA111
D822 DTZ20C or MA8200H
R831 1 1/2W
R8053 3.3K 1/2W
D8050 MA8200H
R8052 3.3K 1/2W
Q8050 XDC114E
Q890 XDC114E
IC854 AN78N08M
C867 33 50V
D862 MA113
D863 MA113
+11.3V
⑪
⑤⑧⑪
+195V
D850 FMC-26U
L860 EXCELDR35V
C816 560P 2KV
R850 0.1 1/2W
C850 1000 250V
R8014 120K 1/4W
R8015 68K 1/4W
R8016 18K 2W
D851 ERC3806
L861 EXCELDR35V
C852 560P 1KV
R851 0.1 1/2W
76.0V
R898 10K 3W
C851 330 160V
A
Q850 2SB940P
R858 1K
D864 MA111 or 1SS353
Q851 2SC1473QR
75.0V
R859 820 1/8W
R852 1K
1.7V
IC851 LM358 (1/2)
R8010 453K
C842 0.22 100V
R850 124K ±1%
2.5V
R861 4.53K ±1%
C858 220 100V
C865 100 25V
Q881 2SC4080 or 2SC4929
D861 MA174
+70V
Q852 2SB941P
D853 CB903-4
L863 EXCELDR35V
R853 0.1 1/2W
34.0V
C853 2200 50V
Q853 2SD1819AQR
R8011 232K
Q854 2SB941P
R862 1K
33.0V
R863 270
1.0V
IC851 LM358 (2/2)
C843 0.33
R864 49.9K ±1%
R865 4.87K ±1%
C859 100 35V
Q882 XDC114E
D878 MA8056M
C872 0.01
⑤⑪
+28V
D854 RL4Z
L864 TSK8031
R854 0.15 1/2W
20.3V
C854 4700 25V
Q855 2SD1819AQR
R866 1K
19.8V
R867 270
1.0V
IC856 LM358 (1/2)
R868 25.5K ±1%
R869 4.75K ±1%
C860 220 25V
IC855 L78M05T
C866 33 50V
⑧⑨⑩
+16V
⑤⑨⑪
+5V_2
⑤⑪
+12V
D855 RL4Z
L865 TSK8031
R855 0.1 1/2W
13.8V
C855 2200 25V
Q856 2SB941P
Q857 2SD1819AQR
R841 1K
13.2V
R842 270
R8012 475K
1.5V
IC856 LM358 (2/2)
R8013 330
C844 0.22 16V
R843 16.2K ±1%
R844 4.75K ±1%
C861 220 16V
IC857
⑩
+5V_3
D856 RK49
L866 TSK8031
R856 0.1 1/2W
8.8V
C856 2200 16V
D891 MA111
Q858 2SB941P
Q859 2SD1819AQR
R845 1K
8.1V
R847 150
1.1V
IC852 LM358 (1/2)
R848 2K ±1%
C862 1000 10V
C871 47 16V
R849 1.33K ±1%
D859
R849A
⑨⑪
HEATER
⑪ PSM2
⑪ PSM3
Q891 IMD3A
R8055 8.2K
C894 100 6.3V
D858 MA1051M
C835 10 100V
R885 10K ±1%
R884 10K ±1%
R886 10K
Q862 2SB1218AQR
Q860 2SD1266
R883 2.7K
Q863 IMH11A
R8020 10K
5V
8V
D857 RL4Z
L867 EXCELDR35V
R857 0.1 1/2W
19.9V
C857 4700 25V
-19.3V
R839 1K
Q861 2SB1219A
0.8V
R838 150 1/2W
IC852 LM358 (2/2)
-2.5V
R837 24.9K ±1%
R835 4.75K ±1%
+5V_1
R836 8.2K
R896 1.8K
C863 220 25V
Q866 XDC114E
R8018 10K
Q865 XDC114E
0.0V
⑧⑨⑩⑪
-15V
⑪ PSM1
Q864 XDC114E
PC830 TLP721FD4GRH
R832 200 1/8W
C836
R833 102K ±1%
C869 10 50V
C841 0.01
IC853 LM358 (1/2)
3.6V
D860
R894 56K
R895A 3.3K
R893A 10K ±1%
R895B 3.32K ±1%
R899A 220 1W
R888A 10K ±1%
R889A 10K ±1%
R8019 10K
PC831 TLP750D4
IC840 L78LR05C
C840 0.1
D840 DTZTT5R6B or MA8056M
R897 2.7K 1/4W
IC858 UPC1093T
C870 22 100V
C866 100 35V
R899B 47K
Q867 XDC114E
⑧⑪
+5V_1
R810 82
Q865 2SC3938R
R8008 1K
R8009 1K
⑪ RSTX
⑪ POWTRG
IC853 (2/2) LM358
C830 4700P
C831 4700P
3.8Vp-p
1.0Vp-p

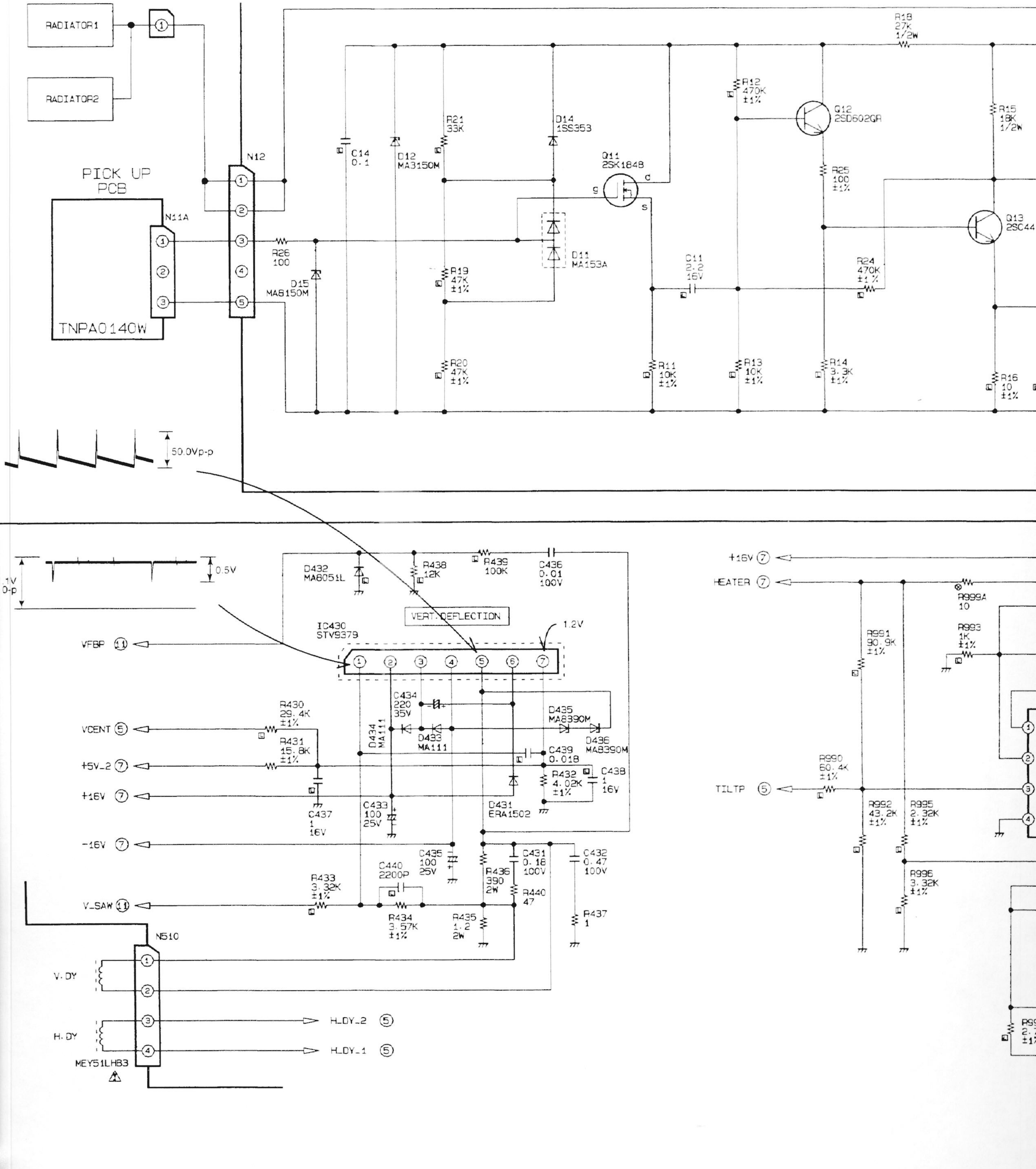
rtant safety notice
rk have special characteristics important for safety.
use only manufacturer's specified parts.

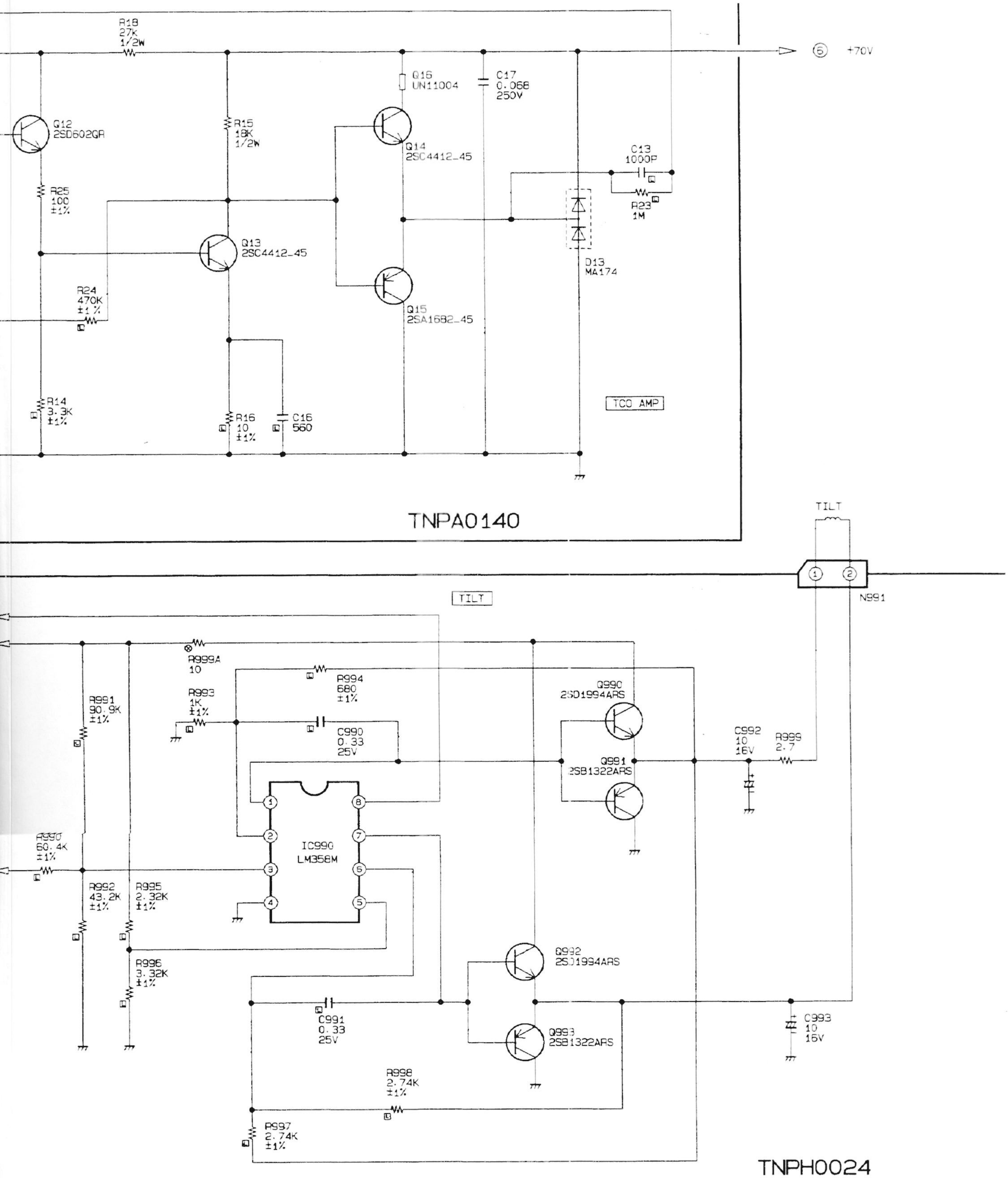


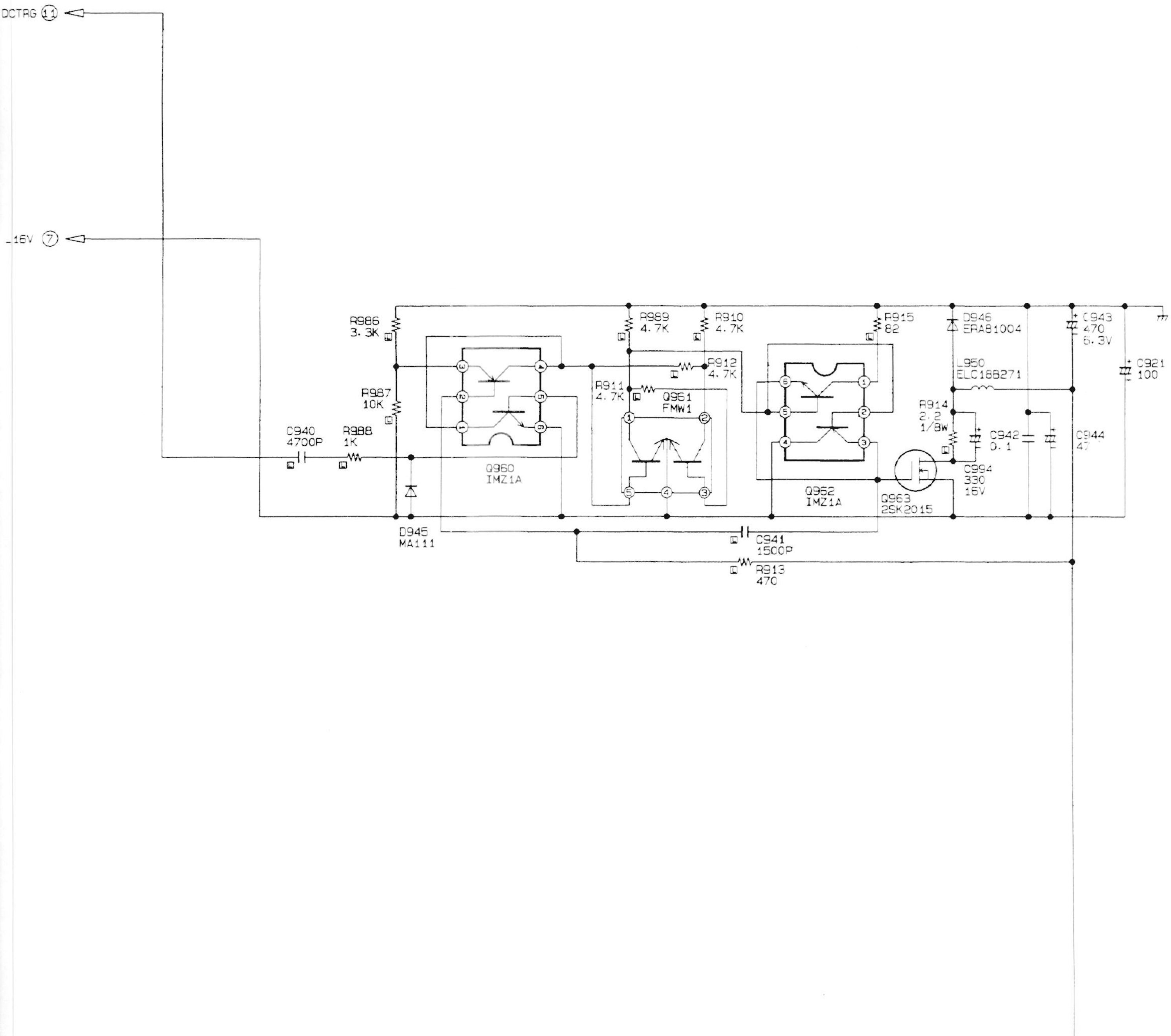
⑦ 195V
R901 3.9K 1/2W
C901 470 250V
D904 EU02A
C904 100 25V
R905 270K
Q904 2SC3311AQR
R907 1K 1/8W
Q906 2SK1917_M
Q905 2SA1309AQR
C903 3.3 630V
⑦ 16V
Q901 2SC3311AQR
R904 10K
Q903 2SC1473AQR
C902 3.3 630V
R908 1K 1/8W
Q907 2SK1917_M
Q902 2SA1309AQR
D905 MA111
R902 33K
#C905
8
7
5
6
4
IC901 LM358M
R909 470
⑦ -16V
R903 1K
D903 MTZJ5R1A
D906 MA111
D902 EU02A
R906 47K
⑦ +5V_1
C906 0.01
T

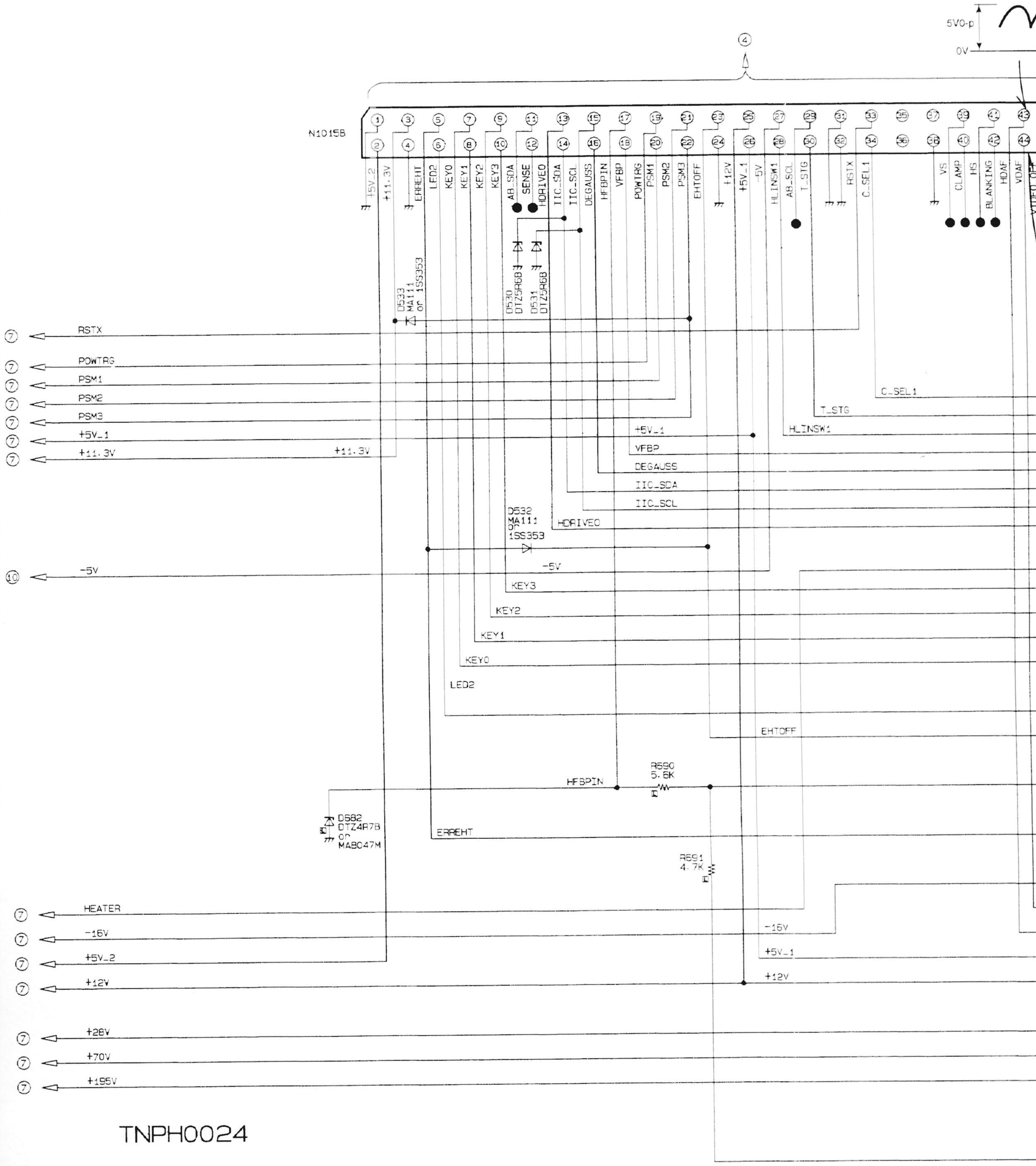

SHEET ⑧
N901
N902
DEGAUSSING COIL
TSPA023
DEGAUSSING COIL
TSPA023
R907
1K
1/8W
Q906
2SK1917_M
Q907
2SK1917_M
C903
3.3
630V
C902
3.3
630V
R902
33K
D902
EU02A
D901
EU02A
906
7K
C906
0.01
DEGAUSS
⑪

TNPH0024


RADIATOR1
RADIATOR2
①
PICK UP PCB
TNPA0140W
N11A
N12
R26 100
D15 MA8150M
C14 0.1
D12 MA3150M
R21 33K
R19 47K ±1%
R20 47K ±1%
D14 1SS353
D11 MA153A
Q11 2SK1848
g
d
s
C11 2.2 16V
R11 10K ±1%
R12 470K ±1%
R13 10K ±1%
Q12 2SD602QR
R25 100 ±1%
R14 3.3K ±1%
R18 27K 1/2W
R24 470K ±1%
R15 18K 1/2W
Q13 2SC44
R16 10 ±1%
50.0Vp-p
0.5V
.1V
0-p
D432 MA8051L
R438 12K
R439 100K
C436 0.01 100V
VERT. DEFLECTION
IC430 STV9379
1.2V
VFBP ⑪
VCENT ⑤
+5V_2 ⑦
+16V ⑦
-16V ⑦
V_SAW ⑪
R430 29.4K ±1%
R431 15.8K ±1%
C437 1 16V
C434 220 35V
D434 MA111
D433 MA111
D435 MA8390M
D436 MA8390M
C439 0.018
R432 4.02K ±1%
C438 1 16V
C433 100 25V
D431 ERA1502
C435 100 25V
C440 2200P
R433 3.32K ±1%
R434 3.57K ±1%
R435 1.2 2W
R436 390 2W
R440 47
C431 0.18 100V
C432 0.47 100V
R437 1
N510
V.DY
H.DY
MEY51LHB3
H_DY_2 ⑤
H_DY_1 ⑤
+16V ⑦
HEATER ⑦
TILTP ⑤
R999A 10
R993 1K ±1%
R991 90.9K ±1%
R990 60.4K ±1%
R992 43.2K ±1%
R995 2.32K ±1%
R996 3.32K ±1%
R99 2.7 ±1

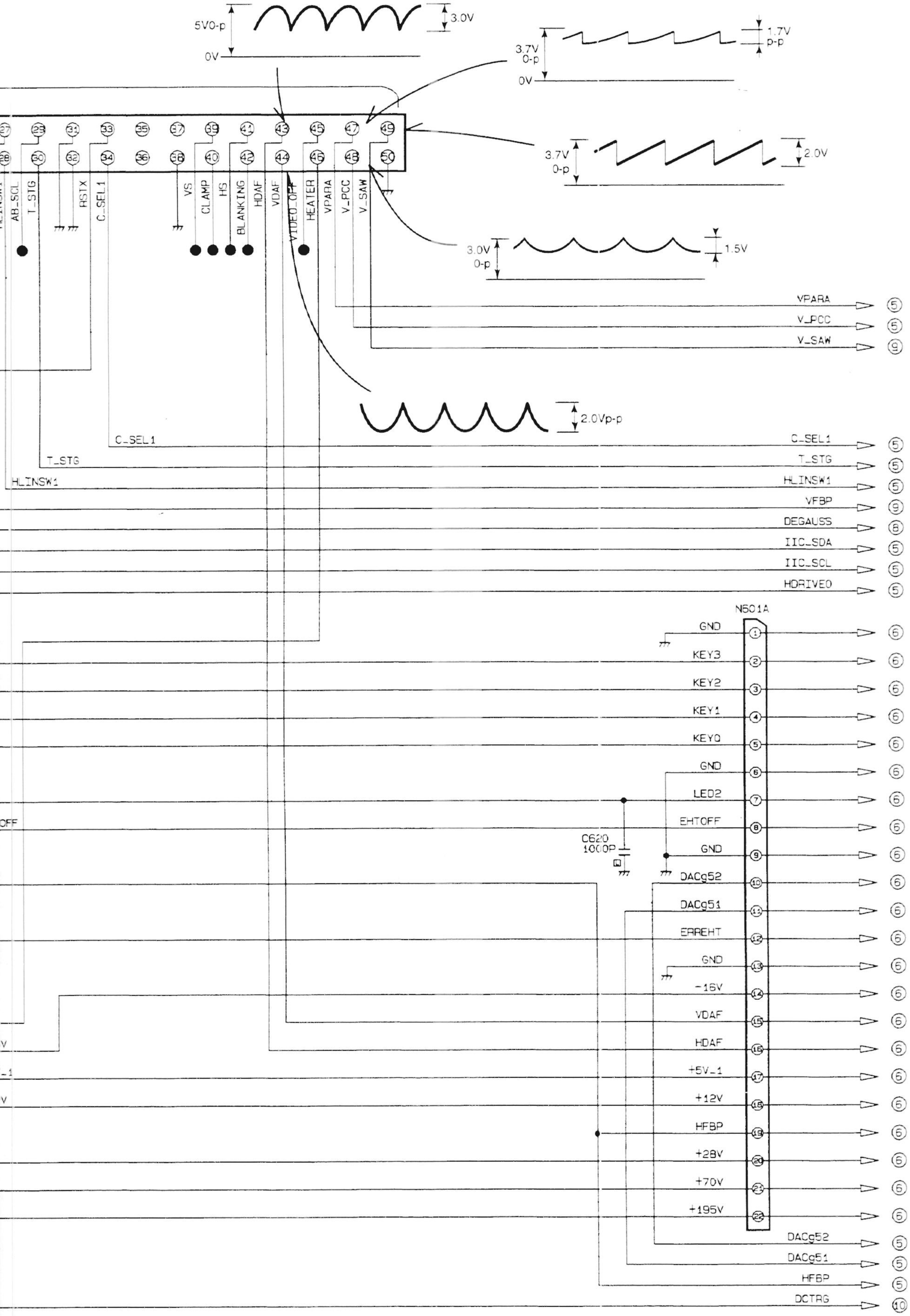

R18
27K
1/2W
⑥ +70V
Q16
UN11004
C17
0.068
250V
Q12
2SD602GR
R15
18K
1/2W
Q14
2SC4412_45
C13
1000P
R25
100
±1%
R23
1M
Q13
2SC4412_45
D13
MA174
R24
470K
±1%
Q15
2SA1682_45
TCO AMP
R14
3.3K
±1%
R16
10
±1%
C16
560
TNPA0140
TILT
①
②
N991
TILT
R999A
10
R994
680
±1%
R991
90.9K
±1%
R993
1K
±1%
Q990
2SD1994ARS
C990
0.33
25V
C992
10
16V
R999
2.7
Q991
2SB1322ARS
R990
60.4K
±1%
IC990
LM358M
R992
43.2K
±1%
R995
2.32K
±1%
R996
3.32K
±1%
Q992
2SD1994ARS
C991
0.33
25V
Q993
2SB1322ARS
C993
10
16V
R998
2.74K
±1%
R997
2.74K
±1%
TNPH0024


DCTRG ⑪
16V ⑦
-5V ⑪
C940
4700P
R988
1K
R986
3.3K
R987
10K
D945
MA111
Q960
IMZ1A
R989
4.7K
R910
4.7K
R912
4.7K
R911
4.7K
Q951
FMW1
C941
1500P
R913
470
R915
82
Q962
IMZ1A
Q963
2SK2015
D946
ERA81004
L950
ELC18B271
R914
2.2
1/8W
C994
330
16V
C942
0.1
C943
470
6.3V
C944
47
C921
100


5V0-p
0V
④
N1015B
+5V_2
+11.3V
ERREHT
LED2
KEY0
KEY1
KEY2
KEY3
AB_SDA
SENSE
HDRIVEO
IIC_SDA
IIC_SCL
DEGAUSS
HFBPIN
VFBP
POWTRG
PSM1
PSM2
PSM3
EHTOFF
+12V
+5V_1
-5V
HLINSW1
AB_SCL
T_STG
RSTX
C_SEL1
VS
CLAMP
HS
BLANKING
HDAF
VDAF
D533
MA111
or 1SS353
D530
DTZ5R6B
D531
DTZ5R6B
D532
MA111
or
1SS353
R590
5.6K
R591
4.7K
D682
DTZ4R7B
or
MA8047M
⑦ RSTX
⑦ POWTRG
⑦ PSM1
⑦ PSM2
⑦ PSM3
⑦ +5V_1
⑦ +11.3V
+11.3V
+5V_1
VFBP
DEGAUSS
IIC_SDA
IIC_SCL
HDRIVEO
C_SEL1
T_STG
HLINSW1
⑩ -5V
-5V
KEY3
KEY2
KEY1
KEY0
LED2
EHTOFF
HFBPIN
ERREHT
⑦ HEATER
⑦ -16V
⑦ +5V_2
⑦ +12V
-16V
+5V_1
+12V
⑦ +28V
⑦ +70V
⑦ +195V

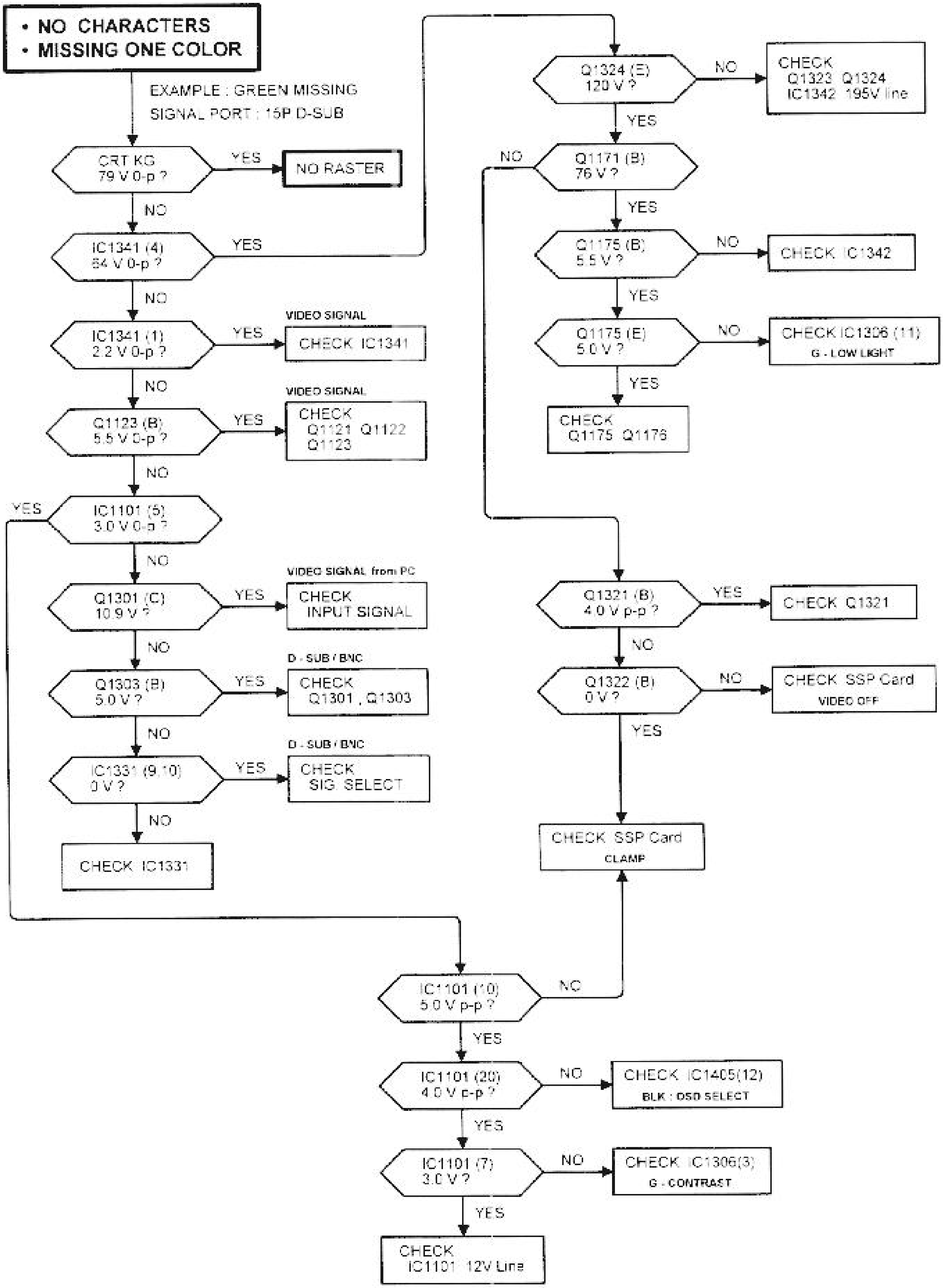
TNPH0024

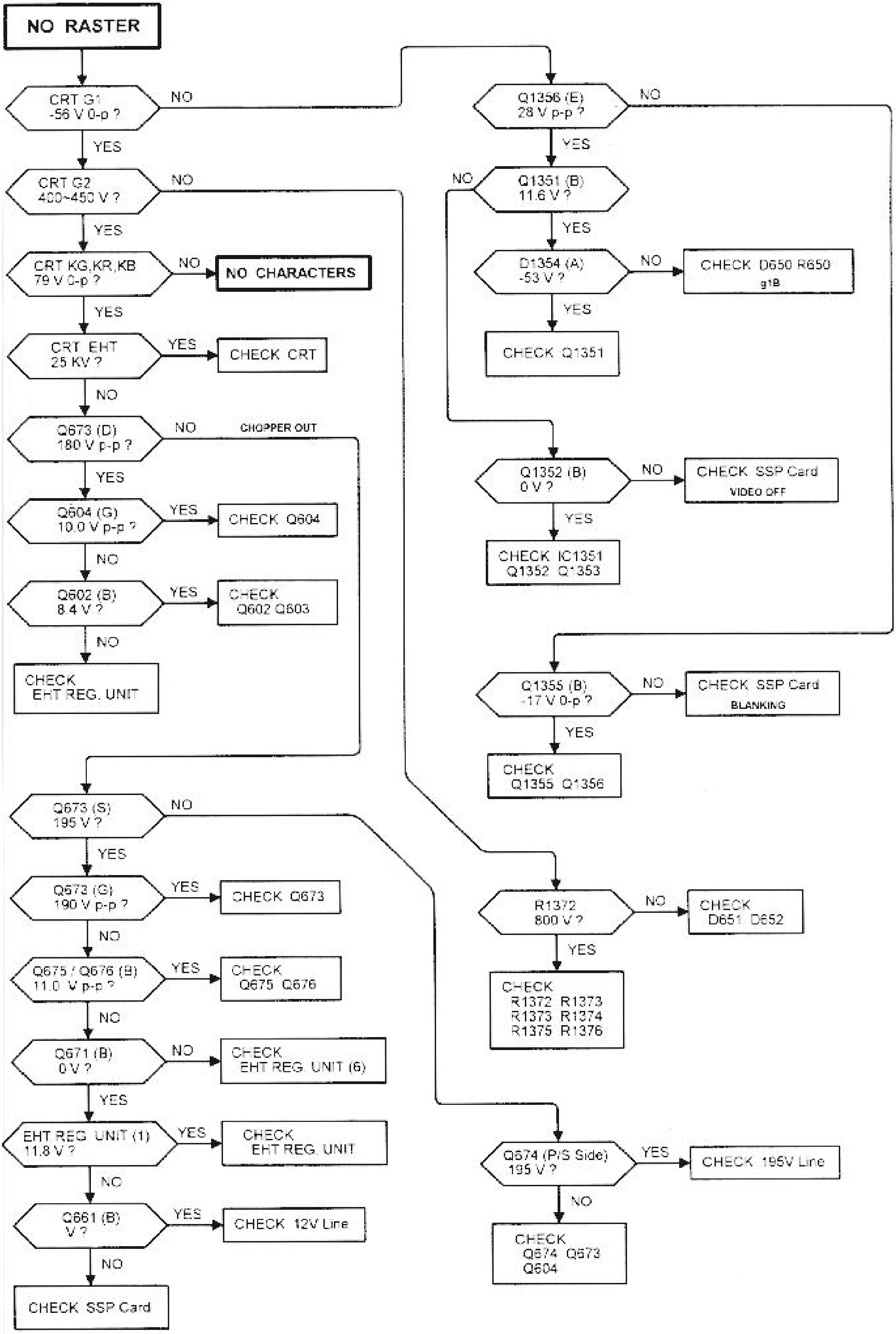
SHEET ⑪

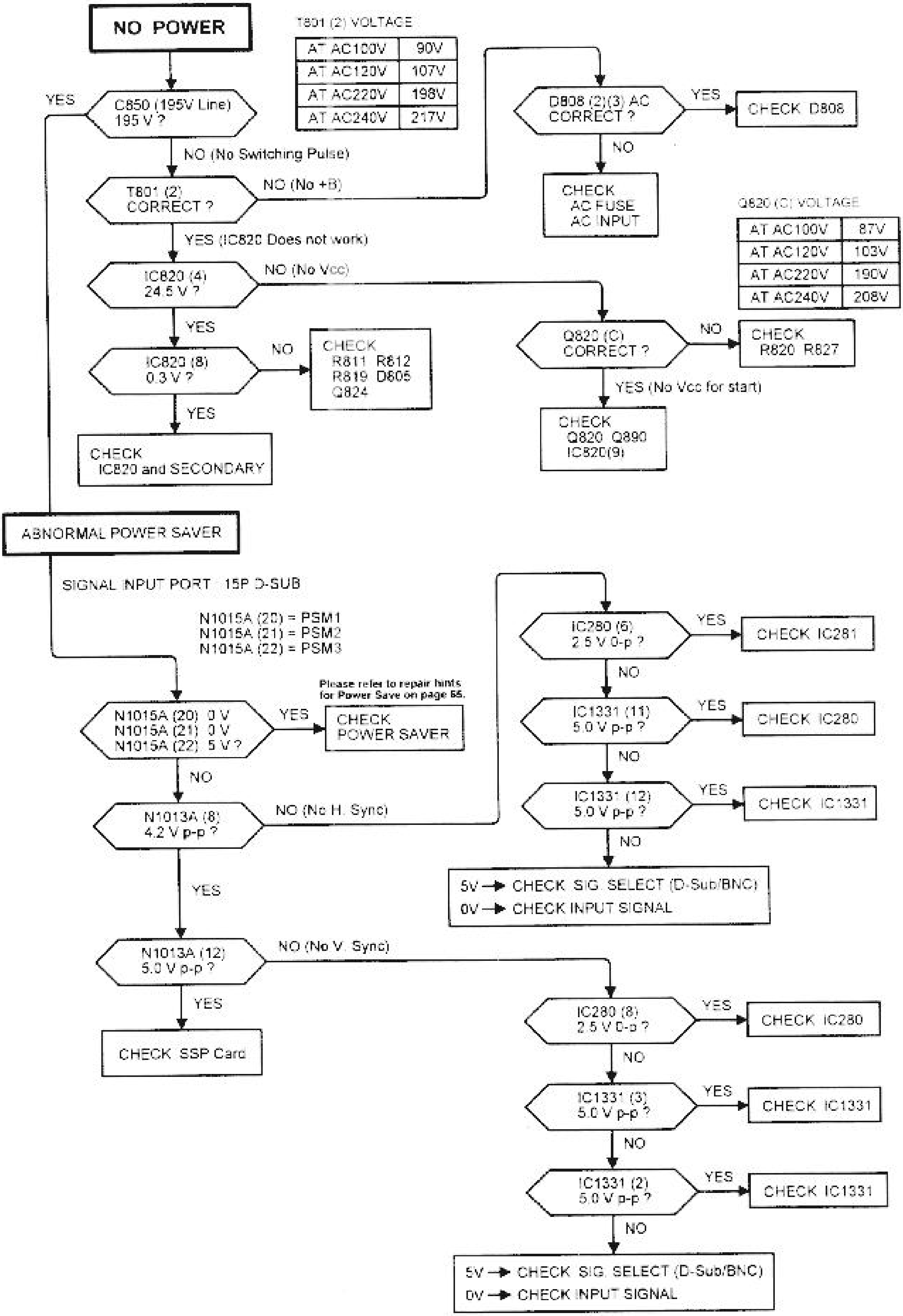


5V0-p
3.0V
0V
3.7V
0-p
1.7V
p-p
0V
3.7V
0-p
2.0V
3.0V
0-p
1.5V
2.0Vp-p
27
29
31
33
35
37
39
41
43
45
47
49
28
30
32
34
36
38
40
42
44
46
48
50
AB_SCL
T_STG
RSTX
C_SEL1
VS
CLAMP
HS
BLANKING
HDAF
VDAF
VIDEO_OFF
HEATER
VPARA
V_PCC
V_SAW
VPARA
V_PCC
V_SAW
C_SEL1
T_STG
HLINSW1
C_SEL1
T_STG
HLINSW1
VFBP
DEGAUSS
IIC_SDA
IIC_SCL
HDRIVEO
N501A
GND
KEY3
KEY2
KEY1
KEY0
GND
LED2
EHTOFF
GND
DACg52
DACg51
ERREHT
GND
-16V
VDAF
HDAF
+5V_1
+12V
HFBP
+28V
+70V
+195V
C620
1000P
DACg52
DACg51
HFBP
DCTRG
OFF
V
-1
V
⑤
⑤
⑨
⑤
⑤
⑤
⑨
⑧
⑤
⑤
⑤
⑥
⑤
⑤
⑤
⑩

TROUBLE SHOOTING HINTS


• NO CHARACTERS
• MISSING ONE COLOR
EXAMPLE : GREEN MISSING
SIGNAL PORT : 15P D-SUB
CRT KG 79 V 0-p ?
YES
NO RASTER
NO
IC1341 (4) 64 V 0-p ?
YES
NO
IC1341 (1) 2.2 V 0-p ?
YES
VIDEO SIGNAL
CHECK IC1341
NO
Q1123 (B) 5.5 V 0-p ?
YES
VIDEO SIGNAL
CHECK Q1121 Q1122 Q1123
NO
IC1101 (5) 3.0 V 0-p ?
YES
NO
Q1301 (C) 10.9 V ?
YES
VIDEO SIGNAL from PC
CHECK INPUT SIGNAL
NO
Q1303 (B) 5.0 V ?
YES
D - SUB / BNC
CHECK Q1301 , Q1303
NO
IC1331 (9,10) 0 V ?
YES
D - SUB / BNC
CHECK SIG. SELECT
NO
CHECK IC1331
Q1324 (E) 120 V ?
NO
CHECK Q1323 Q1324 IC1342 195V line
YES
Q1171 (B) 76 V ?
NO
YES
Q1175 (B) 5.5 V ?
NO
CHECK IC1342
YES
Q1175 (E) 5.0 V ?
NO
CHECK IC1306 (11)
G - LOW LIGHT
YES
CHECK Q1175 Q1176
Q1321 (B) 4.0 V p-p ?
YES
CHECK Q1321
NO
Q1322 (B) 0 V ?
NO
CHECK SSP Card
VIDEO OFF
YES
CHECK SSP Card
CLAMP
IC1101 (10) 5.0 V p-p ?
NO
YES
IC1101 (20) 4.0 V p-p ?
NO
CHECK IC1405(12)
BLK : OSD SELECT
YES
IC1101 (7) 3.0 V ?
NO
CHECK IC1306(3)
G - CONTRAST
YES
CHECK IC1101 12V Line


NO RASTER
CRT G1 -56 V 0-p ?
NO
YES
CRT G2 400~450 V ?
NO
YES
CRT KG,KR,KB 79 V 0-p ?
NO
NO CHARACTERS
YES
CRT EHT 25 KV ?
YES
CHECK CRT
NO
Q673 (D) 180 V p-p ?
NO
CHOPPER OUT
YES
Q604 (G) 10.0 V p-p ?
YES
CHECK Q604
NO
Q602 (B) 8.4 V ?
YES
CHECK Q602 Q603
NO
CHECK EHT REG. UNIT
Q673 (S) 195 V ?
NO
YES
Q673 (G) 190 V p-p ?
YES
CHECK Q673
NO
Q675 / Q676 (B) 11.0 V p-p ?
YES
CHECK Q675 Q676
NO
Q671 (B) 0 V ?
NO
CHECK EHT REG. UNIT (6)
YES
EHT REG. UNIT (1) 11.8 V ?
YES
CHECK EHT REG. UNIT
NO
Q661 (B) V ?
YES
CHECK 12V Line
NO
CHECK SSP Card
Q1356 (E) 28 V p-p ?
NO
YES
Q1351 (B) 11.6 V ?
NO
YES
D1354 (A) -53 V ?
NO
CHECK D650 R650 g1B
YES
CHECK Q1351
Q1352 (B) 0 V ?
NO
CHECK SSP Card VIDEO OFF
YES
CHECK IC1351 Q1352 Q1353
Q1355 (B) -17 V 0-p ?
NO
CHECK SSP Card BLANKING
YES
CHECK Q1355 Q1356
R1372 800 V ?
NO
CHECK D651 D652
YES
CHECK R1372 R1373 R1373 R1374 R1375 R1376
Q674 (P/S Side) 195 V ?
YES
CHECK 195V Line
NO
CHECK Q674 Q673 Q604



T801 (2) VOLTAGE

AT AC100V	90V
AT AC120V	107V
AT AC220V	198V
AT AC240V	217V

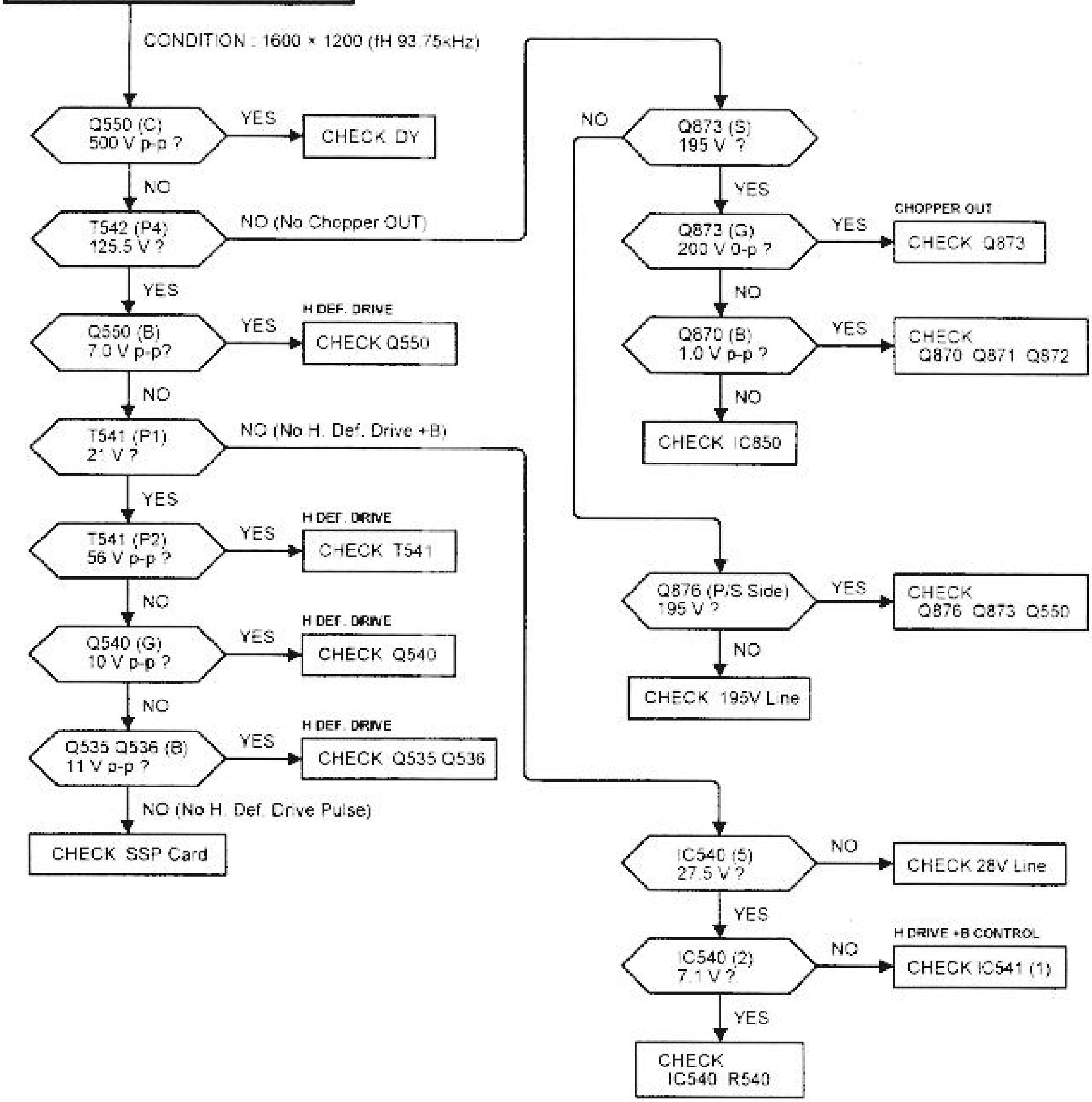
Q820 (C) VOLTAGE

AT AC100V	87V
AT AC120V	103V
AT AC220V	190V
AT AC240V	208V

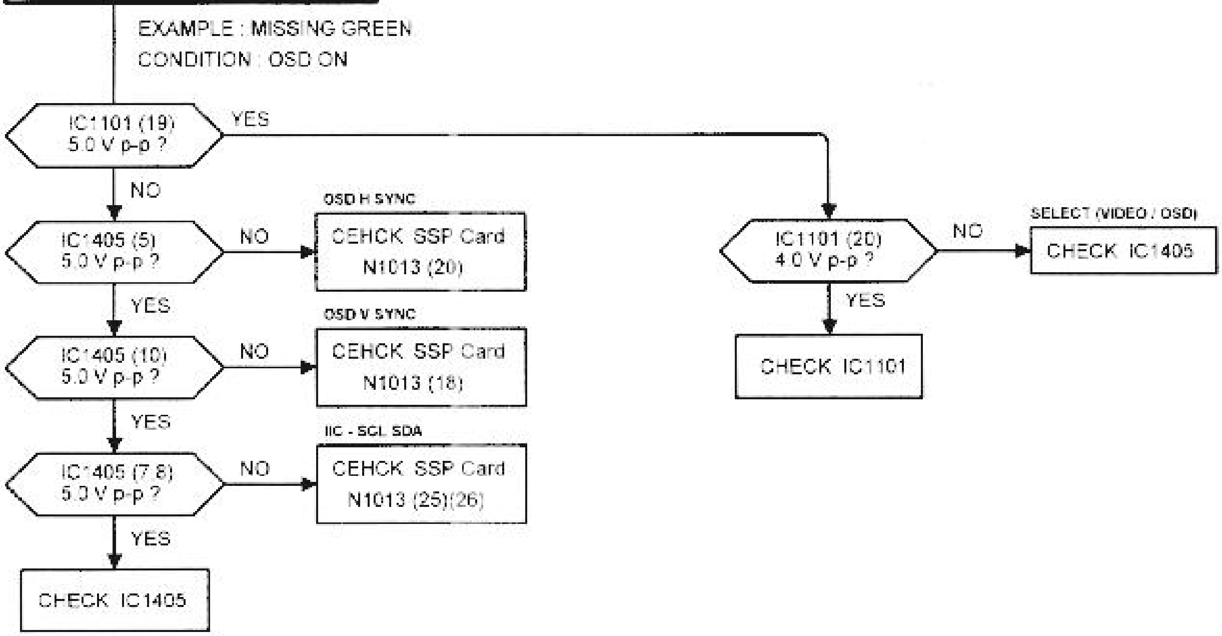
Please refer to repair hints for Power Save on page 65.

NO POWER
C850 (195V Line) 195 V ?
YES
NO (No Switching Pulse)
T801 (2) CORRECT ?
NO (No +B)
D808 (2)(3) AC CORRECT ?
YES
CHECK D808
NO
CHECK AC FUSE AC INPUT
YES (IC820 Does not work)
IC820 (4) 24.5 V ?
NO (No Vcc)
Q820 (C) CORRECT ?
NO
CHECK R820 R827
YES (No Vcc for start)
CHECK Q820 Q890 IC820(9)
YES
IC820 (8) 0.3 V ?
NO
CHECK R811 R812 R819 D805 Q824
YES
CHECK IC820 and SECONDARY
ABNORMAL POWER SAVER
SIGNAL INPUT PORT : 15P D-SUB
N1015A (20) = PSM1
N1015A (21) = PSM2
N1015A (22) = PSM3
N1015A (20) 0 V
N1015A (21) 0 V
N1015A (22) 5 V ?
YES
CHECK POWER SAVER
NO
N1013A (8) 4.2 V p-p ?
NO (No H. Sync)
IC280 (6) 2.5 V 0-p ?
YES
CHECK IC281
NO
IC1331 (11) 5.0 V p-p ?
YES
CHECK IC280
NO
IC1331 (12) 5.0 V p-p ?
YES
CHECK IC1331
NO
5V → CHECK SIG. SELECT (D-Sub/BNC)
0V → CHECK INPUT SIGNAL
YES
N1013A (12) 5.0 V p-p ?
NO (No V. Sync)
YES
CHECK SSP Card
IC280 (8) 2.5 V 0-p ?
YES
CHECK IC280
NO
IC1331 (3) 5.0 V p-p ?
YES
CHECK IC1331
NO
IC1331 (2) 5.0 V p-p ?
YES
CHECK IC1331
NO
5V → CHECK SIG. SELECT (D-Sub/BNC)
0V → CHECK INPUT SIGNAL

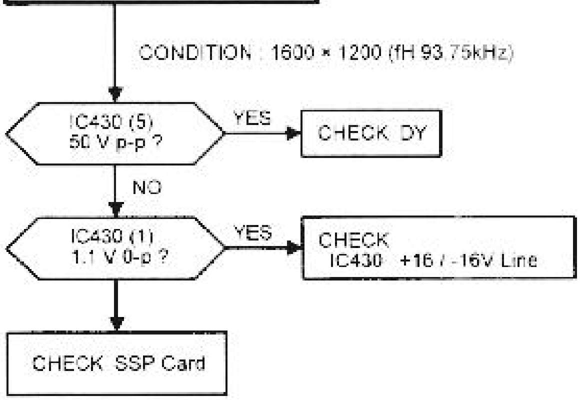
DEFECTIVE HORIZONTAL DEFLECTION CIRCUIT


CONDITION : 1600 × 1200 (fH 93.75kHz)
Q550 (C) 500 V p-p ?
YES
CHECK DY
NO
T542 (P4) 125.5 V ?
NO (No Chopper OUT)
YES
Q550 (B) 7.0 V p-p?
YES
H DEF. DRIVE
CHECK Q550
NO
T541 (P1) 21 V ?
NO (No H. Def. Drive +B)
YES
T541 (P2) 56 V p-p ?
YES
H DEF. DRIVE
CHECK T541
NO
Q540 (G) 10 V p-p ?
YES
H DEF. DRIVE
CHECK Q540
NO
Q535 Q536 (B) 11 V p-p ?
YES
H DEF. DRIVE
CHECK Q535 Q536
NO (No H. Def. Drive Pulse)
CHECK SSP Card
NO
Q873 (S) 195 V ?
YES
Q873 (G) 200 V 0-p ?
YES
CHOPPER OUT
CHECK Q873
NO
Q870 (B) 1.0 V p-p ?
YES
CHECK Q870 Q871 Q872
NO
CHECK IC850
Q876 (P/S Side) 195 V ?
YES
CHECK Q876 Q873 Q550
NO
CHECK 195V Line
IC540 (5) 27.5 V ?
NO
CHECK 28V Line
YES
IC540 (2) 7.1 V ?
NO
H DRIVE +B CONTROL
CHECK IC541 (1)
YES
CHECK IC540 R540

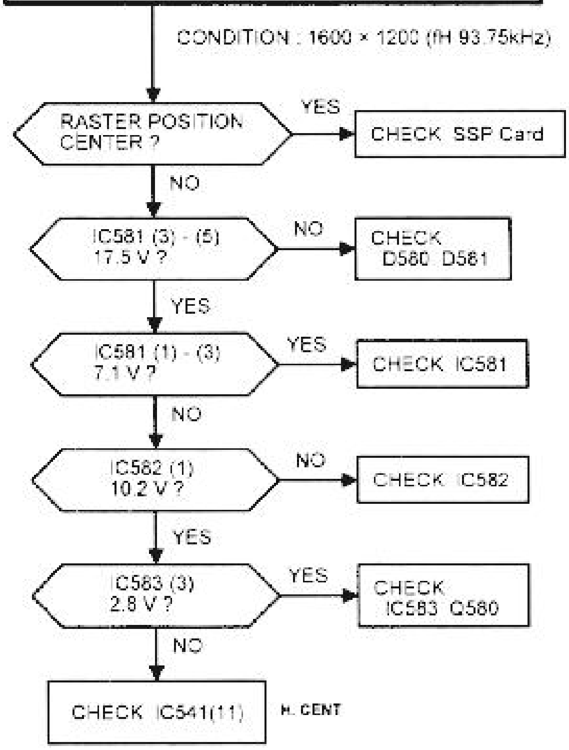
O.S.D. DOES NOT WORK


EXAMPLE : MISSING GREEN
CONDITION : OSD ON
IC1101 (19) 5.0 V p-p ?
YES
NO
IC1405 (5) 5.0 V p-p ?
NO
OSD H SYNC
CEHCK SSP Card N1013 (20)
YES
IC1405 (10) 5.0 V p-p ?
NO
OSD V SYNC
CEHCK SSP Card N1013 (18)
YES
IC1405 (7,8) 5.0 V p-p ?
NO
IIC - SCL SDA
CEHCK SSP Card N1013 (25)(26)
YES
CHECK IC1405
IC1101 (20) 4.0 V p-p ?
NO
SELECT (VIDEO / OSD)
CHECK IC1405
YES
CHECK IC1101

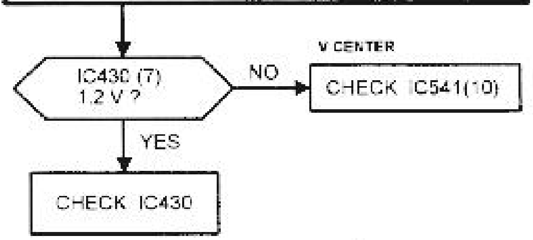
INCORRECT V SIZE


CONDITION : 1600 × 1200 (fH 93.75kHz)
IC430 (5) 50 V p-p ?
YES
CHECK DY
NO
IC430 (1) 1.1 V 0-p ?
YES
CHECK IC430 +16 / -16V Line
CHECK SSP Card

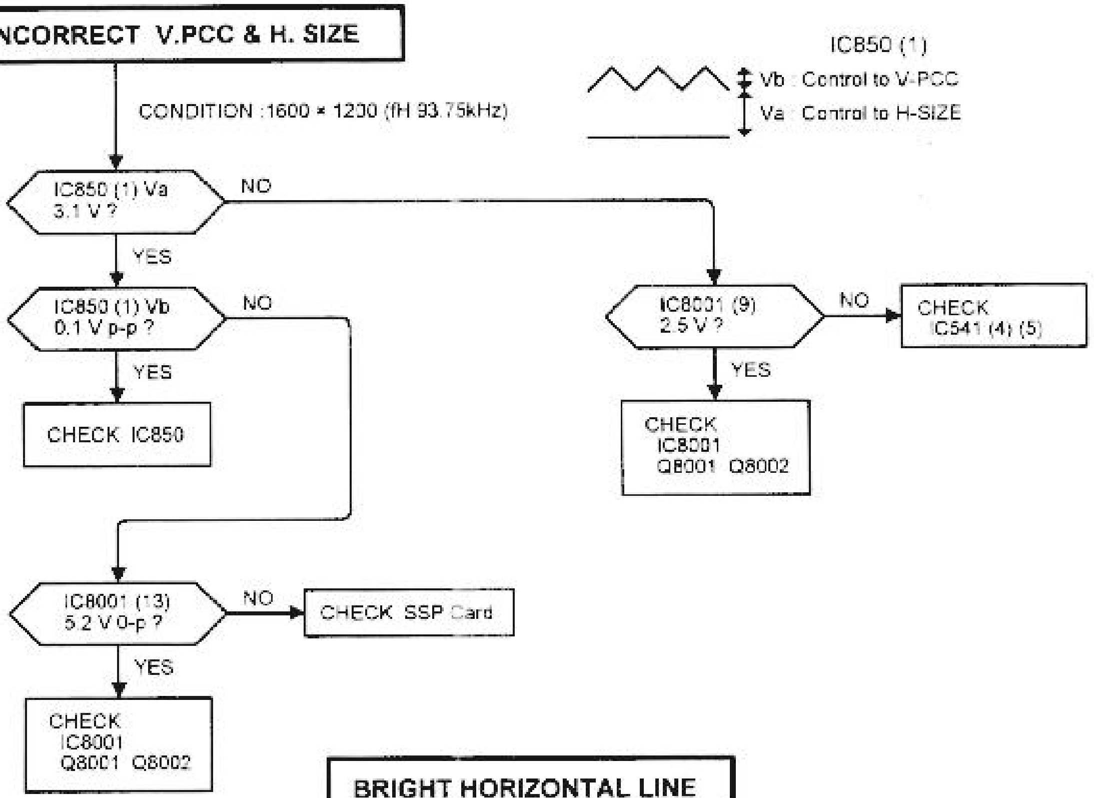
INCORRECT H. POSITION CONTROL


CONDITION : 1600 × 1200 (fH 93.75kHz)
RASTER POSITION CENTER ?
YES
CHECK SSP Card
NO
IC581 (3) - (5) 17.5 V ?
NO
CHECK D580 D581
YES
IC581 (1) - (3) 7.1 V ?
YES
CHECK IC581
NO
IC582 (1) 10.2 V ?
NO
CHECK IC582
YES
IC583 (3) 2.8 V ?
YES
CHECK IC583 Q580
NO
CHECK IC541(11)
H. CENT

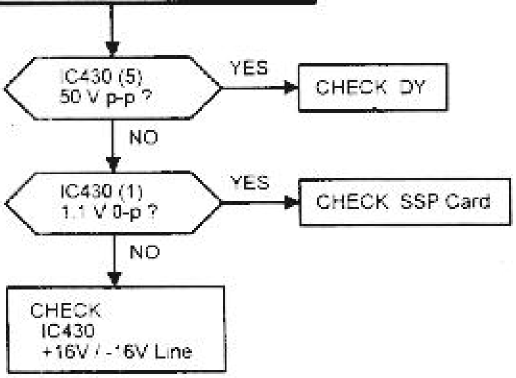
INCORRECT V. POSITION CONTROL


V CENTER
IC430 (7) 1.2 V ?
NO
CHECK IC541(10)
YES
CHECK IC430

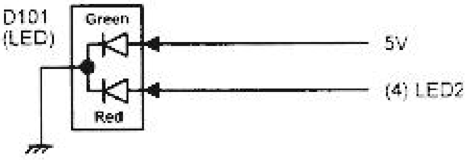
INCORRECT V.PCC & H. SIZE


IC850 (1)
Vb : Control to V-PCC
Va : Control to H-SIZE
CONDITION :1600 × 1200 (fH 93.75kHz)
IC850 (1) Va 3.1 V ?
NO
YES
IC850 (1) Vb 0.1 V p-p ?
NO
YES
CHECK IC850
IC8001 (9) 2.5 V ?
NO
CHECK IC541 (4) (5)
YES
CHECK IC8001 Q8001 Q8002
IC8001 (13) 5.2 V 0-p ?
NO
CHECK SSP Card
YES
CHECK IC8001 Q8001 Q8002

BRIGHT HORIZONTAL LINE APPEARS ON THE SCREEN


IC430 (5) 50 V p-p ?
YES
CHECK DY
NO
IC430 (1) 1.1 V 0-p ?
YES
CHECK SSP Card
NO
CHECK IC430 +16V / -16V Line

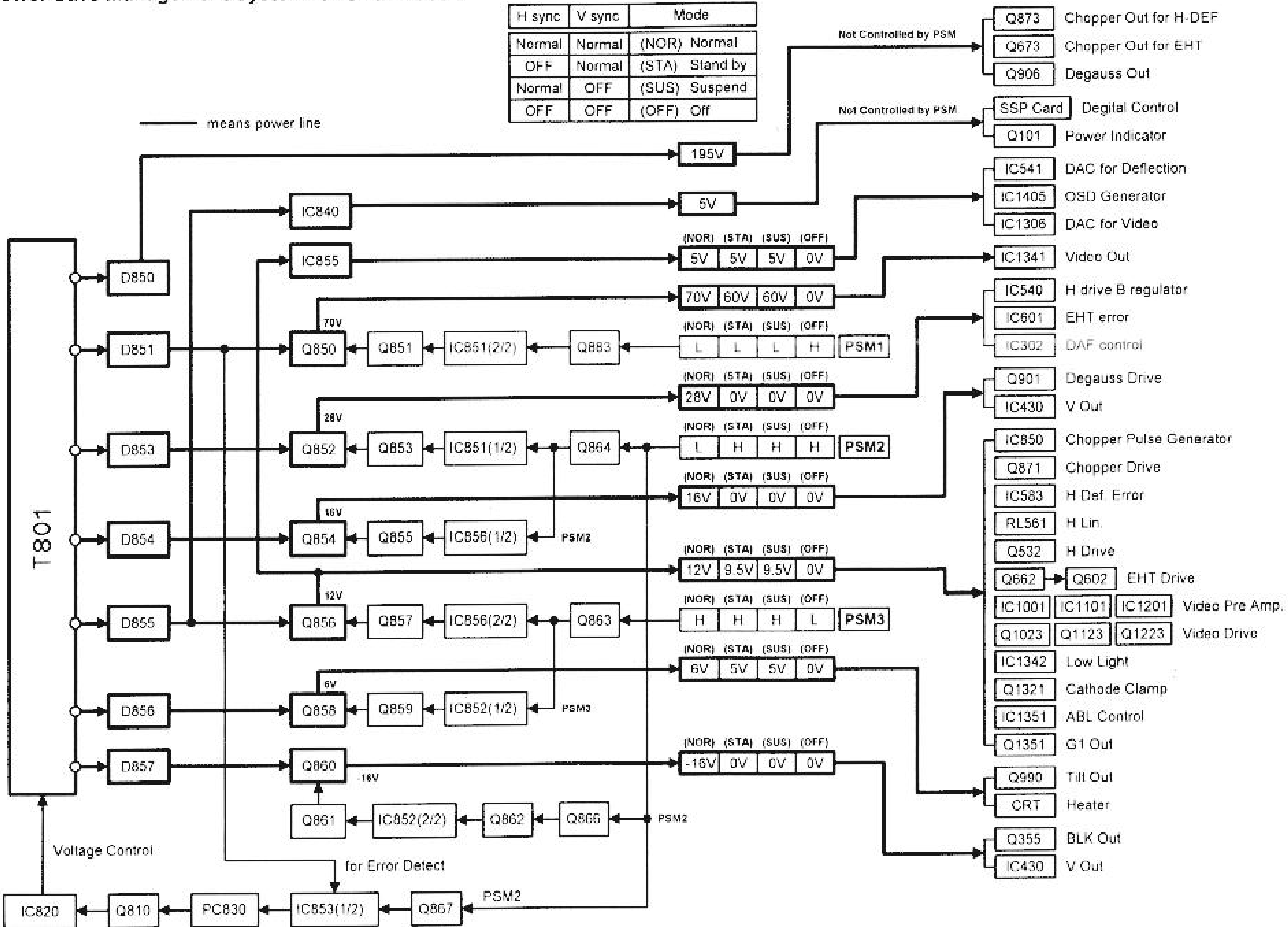
ABNORMAL POWER INDICATOR


D101 (LED)
Green
Red
5V
(4) LED2

HS	VS	LED2	COLOR
ON	ON	LOW	GREEN
OFF	ON	HIGH	YELLOW
ON	OFF	HIGH	YELLOW
OFF	OFF	HIGH	YELLOW

Power Save Management System for GV3 Chassis

H sync	V sync	Mode
Normal	Normal	(NOR) Normal
OFF	Normal	(STA) Stand by
Normal	OFF	(SUS) Suspend
OFF	OFF	(OFF) Off


means power line
T801
D850
D851
D853
D854
D855
D856
D857
IC840
IC855
Q850
Q851
IC851(2/2)
Q883
Q852
Q853
IC851(1/2)
Q864
Q854
Q855
IC856(1/2)
Q856
Q857
IC856(2/2)
Q863
Q858
Q859
IC852(1/2)
Q860
Q861
IC852(2/2)
Q862
Q865
IC820
Q810
PC830
IC853(1/2)
Q867
Voltage Control
for Error Detect
PSM2
PSM3
70V
28V
16V
12V
6V
-16V
195V
5V
(NOR) (STA) (SUS) (OFF)
5V 5V 5V 0V
70V 60V 60V 0V
L L L H PSM1
28V 0V 0V 0V
L H H H PSM2
16V 0V 0V 0V
12V 9.5V 9.5V 0V
H H H L PSM3
6V 5V 5V 0V
-16V 0V 0V 0V
Not Controlled by PSM
Not Controlled by PSM
Q873 Chopper Out for H-DEF
Q673 Chopper Out for EHT
Q906 Degauss Out
SSP Card Degital Control
Q101 Power Indicator
IC541 DAC for Deflection
IC1405 OSD Generator
IC1306 DAC for Video
IC1341 Video Out
IC540 H drive B regulator
IC601 EHT error
IC302 DAF control
Q901 Degauss Drive
IC430 V Out
IC850 Chopper Pulse Generator
Q871 Chopper Drive
IC583 H Def. Error
RL561 H Lin.
Q532 H Drive
Q662 Q602 EHT Drive
IC1001 IC1101 IC1201 Video Pre Amp.
Q1023 Q1123 Q1223 Video Drive
IC1342 Low Light
Q1321 Cathode Clamp
IC1351 ABL Control
Q1351 G1 Out
Q990 Tilt Out
CRT Heater
Q355 BLK Out
IC430 V Out

REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by the International symbol ⚠ have special characteristics important for safety. When replacing any of these components use only manufacture's specified parts.

RESISTOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Carbon	F	± 1%
F	Fuse	J	± 5%
M	Metal Oxide	K	± 10%
S	Solid	M	± 20%
W	Wire Wound	G	± 2%

	Part No.		Description		
Example:	ERD25TJ104	Ⓒ	100K	Ⓙ	1/4W

CAPACITOR

PART NAME & DESCRIPTION			
TYPE		ALLOWANCE	
C	Ceramic	C	± 0.25pF
E	Electrolytic	D	± 0.5pF
P	Polyester	F	± 1pF
S	Styrol	J	± 5%
T	Tantalum	K	± 10%
PP	Polypropylene	L	± 15%
		M	± 20%
		P	+100% – 0%
		Z	+80% – 20%

	Part No.		Description		
Example:	ECKF1H103ZF	Ⓒ	0.01μF	Ⓩ	50V

	Ref.No.	Part No.	Description
		CABINET & MAIN PARTS	
⚠	1	TTYA04401-2	ESCUTCHEON
⚠	2	TKUC01201	REAR COVER
⚠	3	TKSG001-A01	BOTTOM CABINET
⚠	4	TKSG002-A01	BASE CABINET
⚠		TKKC5022	LED GUIDE
⚠	5	TKKX5010	CENTER POST
	6	TKKX5011	SPACER RING
	7	TJAA02201	MAIN PC BOARD BRACKET
	8	TUAA02501	BOTTOM PLATE
		TSAA3004	RADIATOR
	9	TUCC5079	SHIELD CASE
	10	TUCC5080	SHIELD CASE(REAR)
	11	TUCC5083	SHIELD CASE(CRT)R
	12	TUCC5084	SHIELD CASE(CRT)L
		TUCC5085	SHIELD CASE BRACKET
⚠	13	TBLB3002-A01	PEDESTAL
⚠	14	TBMC514	MODEL PLATE
⚠	15	TBXA04801	KNOB(POWER SWITCH)
⚠	16	TBXA04901	KNOB(CONTROL)
		TESA012	SPRING(CRT EARTH)
	17	TESH007	FBT SPRING
		TES8586	EARTH SPRING
		TMM15404-1	SPACER RING
		TMM15412-1	LEAD CLAMPER(BIG)
		TMM17474	DOUBLE CLAMPER
		TMM6428-1	DEGAUSS COIL CLAMPER
		TMM6463	CLAMPER(MIDDLE)
		TMM7464	DEGAUSS COIL CLAMPER (SHORT)
		TMM7468	CLAMPER
		TMM81499	PUSH RIVET
		TMM83576-1	CRT RUBBER
⚠	18	TMM83586	RUBBER(WEDGE)
		TMM87408	LEAD CLAMPER(SMALL)
⚠		TMKG035	SPONGE
	19	TMK84990	SET LEG
		TMK85572	FERRITE STICK
		TQFX040	CONDUCTIVE SHEET
		THTF001	SCREW(FOR EHT PCB)
		THT1028	SCREW(FOR CRT)
		THT1069	SCREW(FOR SHIELD CASE)
		XTB4+12J	SCREW
		XTN5+16A	SCREW
		XTV3+10A	SCREW
		XTV3+12J	SCREW
		XYA4+EF8	SCREW
		XYE3+EJ10	SCREW
⚠	20	M51KYY540X	COLOR PICTURE TUBE
	21	TNPA0141-21	PC BOARD W/COMPONENT(SSP
⚠	22	TNPH0024-21	PC BOARD W/COMPONENT (MAIN)
⚠	23	TXANP32171NM	PC BOARD W/COMPONENT(CRT VIDEO INPUT/EHT/SW/TCO)
⚠	24	MEY51LHA	DEFLECTION YOKE
	25	MEK027EFX	CONVERGENCE COIL
⚠	26	TSPA023	DEGAUSS COIL
⚠	27	TSPF002	TILT COIL
⚠		TSXA014	POWER CORD<-E,-A>
⚠		TSXA023	POWER CORD<-M>
		TSXF051-1	SIGNAL CORD
		TSXL013	FLAT CORD(27P)
		TSXL014	FLAT CORD(22P)
		TSXL015	FLAT CORD(7P)
		TSXL016	FLAT CORD(30P)
		TJEA023	TAB TERMINAL
		TSXX033	2P CONNECTOR ASSY
		TSXX044	1P CONNECTOR ASSY
		TSXX045	1P TERMINAL ASSY
		TXAJTV7P154	7P CONNECTOR ASSY
		TXA3A22171NM	CRT EARTH LEAD
⚠	F801	XBA2C40TB15L	FUSE(4.0A)

	Ref.No.	Part No.	Description
		TSMA003	MAGNET
		T4F31519Q	POLYESTER TAPE(50M)
		T4F72425Q	COTTON TAPE(55M)
		T4F90226-2	MAIRA TAPE(30M)
		TPCA30301	OUTER CARTON
		TPDF0143	PEDESTAL PAD
		TXAPD1D2171B	FILLER(BOTTOM)
		TXAPD1D2171T	FILLER(TOP)
		TPE894011-2	SET COVER
		TQE8513-2	FUN BAG COVER
⚠		TQBE0089	INSTRUCTION BOOK
		TQDE14010	REGISTRATION CARD<-M>
		TQDE14011	COLOR CARD<-M>
⚠		TQFA145	CAUTION LABEL
		TQF80720	NHW LABEL
		TQF82880	HIGH VOLTAGE LABEL
		TQF83825-6	SERIAL NO. LABEL
		TQF85363-1	CARTON LABEL<-M>
		TQF85363-5	CARTON LABEL<-A>
		TQF85363-8	CARTON LABEL<-E>
		TQF86553	PTB LABEL(INNER)
		TQF86621	BAR CODE LABEL
		I.C	
	IC280	M52347SP	IC
	IC302	LF347MX	IC
	IC430	STV9379	IC
	IC540	LA6500-FA	IC
	IC541	MB88141PFTF	IC
	IC581	LA6500-FA	IC
	IC582	AN8025M	IC
	IC583	LM358MX	IC
	IC601	LM393MX	IC
	IC820	STR-S6531	HYBRID IC
	IC840	L78LR05C-MA	IC
	IC850	TVS1103	IC
	IC851	LM358MX	IC
	IC852	LM358MX	IC
	IC853	LM358MX	IC
	IC854	AN78N08	IC
	IC855	L78M05T	IC
	IC856	LM358MX	IC
	IC858	UPC1093T	IC
	IC901	LM358MX	IC
	IC990	LM358MX	IC
	IC1001	M52721SP	IC
	IC1101	M52721SP	IC
	IC1201	M52721SP	IC
	IC1306	MB88141PFTF	IC
	IC1331	MM74HCT00MX	IC
	IC1334	AN78L05M-E1	IC
	IC1341	MHW3528	IC
	IC1342	LM358MX	IC

Ref.No.	Part No.	Description
IC1351	LM324MX	IC
IC1405	LSC4317P	IC
IC8001	LM324MX	IC
	TRANSISTORS	
IC1332	XN1531	TRANSISTOR
IC1333	XN5531	TRANSISTOR
Q11	2SK1846	TRANSISTOR
Q12	2SD602R	TRANSISTOR
Q13	2SC4412-45	TRANSISTOR
Q14	2SC4412-45	TRANSISTOR
Q15	2SA1682-45	TRANSISTOR
Q350	2SD2394EF	TRANSISTOR
Q351	2SB1565EF	TRANSISTOR
Q352	2SC4620V25	TRANSISTOR
Q530	XDC114EU	TRANSISTOR
Q531	2SC3938R	TRANSISTOR
Q532	2SD1820AR	TRANSISTOR
Q533	2SB1219AQ	TRANSISTOR
Q534	2SK1468	TRANSISTOR
Q535	2SD1820AR	TRANSISTOR
Q536	2SB1219AQ	TRANSISTOR
Q540	2SK2161RB-LB	TRANSISTOR
Q541	XDC114EU	TRANSISTOR
Q550	2SC5243002FD	TRANSISTOR
Q560	XDC114EU	TRANSISTOR
Q561	2SK2135	TRANSISTOR
Q562	XDC114EU	TRANSISTOR
Q563	2SK2161RB-LB	TRANSISTOR
Q564	XDC114EU	TRANSISTOR
Q565	2SK2161RB-LB	TRANSISTOR
Q566	XDC114EU	TRANSISTOR
Q567	2SK2135	TRANSISTOR
Q568	UN221F	TRANSISTOR
Q580	2SC1473AR	TRANSISTOR
Q601	XDC114EU	TRANSISTOR
Q602	2SD1820AR	TRANSISTOR
Q603	2SB1219AQ	TRANSISTOR
Q604	FS10SM-18A	TRANSISTOR
Q605	2SK1507-91M	TRANSISTOR
Q661	XDC114EU	TRANSISTOR
Q662	2SB1322AR	TRANSISTOR
Q663	XDC114EU	TRANSISTOR
Q671	XDC114EU	TRANSISTOR
Q673	2SJ307RB11LB	TRANSISTOR
Q675	2SD1820AR	TRANSISTOR
Q676	2SB1219AQ	TRANSISTOR
Q685	2SD1820AR	TRANSISTOR
Q811	IMD3A	TRANSISTOR
Q820	2SC4620V25	TRANSISTOR
Q824	2SD1820AR	TRANSISTOR
Q825	2SB1220R	TRANSISTOR
Q850	2SB940PLB	TRANSISTOR

Ref.No.	Part No.	Description
Q851	2SC1473QNC	TRANSISTOR
Q852	2SB941P	TRANSISTOR
Q853	2SD1819AQ	TRANSISTOR
Q854	2SB941P	TRANSISTOR
Q855	2SD1819AQ	TRANSISTOR
Q856	2SB941P	TRANSISTOR
Q857	2SD1819AQ	TRANSISTOR
Q858	2SB941P	TRANSISTOR
Q859	2SD1819AQ	TRANSISTOR
Q860	2SD1266P	TRANSISTOR
Q861	2SB1219AQ	TRANSISTOR
Q862	2SB1218AQ	TRANSISTOR
Q863	IMH11A	TRANSISTOR
Q864	XDC114EU	TRANSISTOR
Q865	2SC3938R	TRANSISTOR
Q866	XDC114EU	TRANSISTOR
Q867	XDC114EU	TRANSISTOR
Q870	2SC3938R	TRANSISTOR
Q871	2SD1820AR	TRANSISTOR
Q872	2SB1219AQ	TRANSISTOR
Q873	2SJ306RB11LB	TRANSISTOR
Q881	2SC4080DETD	TRANSISTOR
Q882	XDC114EU	TRANSISTOR
Q883	XDC114EU	TRANSISTOR
Q890	XDC114EU	TRANSISTOR
Q891	IMD3A	TRANSISTOR
Q901	2SC3311AR	TRANSISTOR
Q902	2SA1309AQ	TRANSISTOR
Q903	2SC1473AR	TRANSISTOR
Q904	2SC3311AR	TRANSISTOR
Q905	2SA1309AQ	TRANSISTOR
Q906	2SK1917F91	TRANSISTOR
Q907	2SK1917F91	TRANSISTOR
Q960	IMZ1A	TRANSISTOR
Q961	FMW1	TRANSISTOR
Q962	IMZ1A	TRANSISTOR
Q963	2SK2015	TRANSISTOR
Q990	2SD1994AR	TRANSISTOR
Q991	2SB1322AR	TRANSISTOR
Q992	2SD1994AR	TRANSISTOR
Q993	2SB1322AR	TRANSISTOR
Q1021	2SC4270	TRANSISTOR
Q1022	2SA1764	TRANSISTOR
Q1023	2SC4270	TRANSISTOR
Q1071	2SC4412-45	TRANSISTOR
Q1075	2SC4412-45	TRANSISTOR
Q1076	2SA1682-45	TRANSISTOR
Q1121	2SC4270	TRANSISTOR
Q1122	2SA1764	TRANSISTOR
Q1123	2SC4270	TRANSISTOR
Q1171	2SC4412-45	TRANSISTOR
Q1175	2SC4412-45	TRANSISTOR
Q1176	2SA1682-45	TRANSISTOR
Q1221	2SC4270	TRANSISTOR
Q1222	2SA1764	TRANSISTOR
Q1223	2SC4270	TRANSISTOR
Q1271	2SC4412-45	TRANSISTOR
Q1275	2SC4412-45	TRANSISTOR
Q1276	2SA1682-45	TRANSISTOR
Q1301	XDA114EU	TRANSISTOR
Q1302	XDA114EU	TRANSISTOR
Q1303	XDC114EU	TRANSISTOR
Q1304	XDC114EU	TRANSISTOR
Q1321	2SA1739R	TRANSISTOR
Q1322	XDC114EU	TRANSISTOR
Q1323	2SC1473AR	TRANSISTOR
Q1324	2SC1473AR	TRANSISTOR
Q1351	2SB1220R	TRANSISTOR
Q1352	XDC114EU	TRANSISTOR
Q1353	XDC114EU	TRANSISTOR
Q1354	2SC4632RB7LB	TRANSISTOR
Q1355	2SC3938R	TRANSISTOR
Q1356	2SC3757R	TRANSISTOR
Q8001	FMS1A	TRANSISTOR
Q8002	FMS1A	TRANSISTOR
Q8050	XDC114EU	TRANSISTOR
	DIODES	
D11	MA153A	DIODE
D12	MA3150M	DIODE
D13	MA174	DIODE
D14	MA111	DIODE
D15	MA8150M	DIODE
D101	SML1816W	DIODE(LED)
D231	DTZTT115R6B	DIODE
D232	DTZTT115R6B	DIODE
D233	DTZTT115R6B	DIODE
D234	DTZTT115R6B	DIODE
D235	DTZTT115R6B	DIODE
D236	DTZTT115R6B	DIODE
D237	DTZTT115R6B	DIODE
D301	DTZTT115R6B	DIODE
D350	MA111	DIODE
D351	MA8056M	DIODE
D352	MA8150M	DIODE

	Ref.No.	Part No.	Description
	D353	MA8330M	DIODE
	D354	MA8330M	DIODE
	D431	ERA1502	DIODE
	D432	MA8051L	DIODE
	D433	MA111	DIODE
	D434	MA111	DIODE
	D435	MA8390M	DIODE
	D436	MA8390M	DIODE
	D530	DTZTT115R6B	DIODE
	D531	DTZTT115R6B	DIODE
	D532	MA111	DIODE
	D533	MA111	DIODE
	D540	DTZTT114R7B	DIODE
	D541	MA4150M	DIODE
	D542	MA111	DIODE
	D543	ERA81004	DIODE
	D544	MA4120M	DIODE
	D550	FMQ-G5GSLF	DIODE
	D552	MA143A	DIODE
	D553	MA142WK	DIODE
	D554	MA4200NM	DIODE
	D561	MA111	DIODE
	D580	RL2Z	DIODE
	D581	RL2Z	DIODE
	D601	DTZTT1115C	DIODE
	D650	EU02Z	DIODE
	D651	RU1P	DIODE
	D652	RU1P	DIODE
	D660	MA111	DIODE
	D671	MA4091NM	DIODE
	D672	RL2Z	DIODE
	D673	RL2Z	DIODE
	D674	MA4390M	DIODE
	D676	MA8150M	DIODE
	D682	DTZTT114R7B	DIODE
	D683	MA8150M	DIODE
⚠	D801	ERZVEAV431	VARISTOR
	D805	DTZTT117R5A	DIODE
⚠	D808	RBV606	DIODE
	D810	MA8300M	DIODE
	D811	MA111	DIODE
	D812	MA111	DIODE
	D820	ERZVEAV431	VARISTOR
	D821	RG2A2	DIODE
	D822	DTZTT1120C	DIODE
	D824	EG01Z	DIODE
	D840	DTZTT115R6B	DIODE
	D850	FMC-26UALF	DIODE
	D851	ERC3806	DIODE
	D853	C8903-4	DIODE
	D854	RL4Z	DIODE
	D855	RL4Z	DIODE
	D856	RK49	DIODE
	D857	RL4Z	DIODE
	D858	MA1051M	DIODE
	D861	MA174	DIODE
	D862	MA113	DIODE
	D863	MA113	DIODE
	D864	MA111	DIODE
	D870	MA111	DIODE
	D871	MA111	DIODE
	D872	MA111	DIODE
	D873	DTZTT1115C	DIODE
	D874	MA111	DIODE
	D875	MA4091NM	DIODE
	D876	C8903-4	DIODE
	D878	MA8056M	DIODE
	D890	MA8033H	DIODE
	D891	MA111	DIODE
	D901	EU02A	DIODE
	D902	EU02A	DIODE
	D903	MTZJ5R1A	DIODE
	D904	EU02A	DIODE
	D905	MA111	DIODE
	D906	MA111	DIODE
	D945	MA111	DIODE
	D946	ERA81004	DIODE
	D1001	MA30WA	DIODE
	D1021	DCC010	DIODE
	D1022	DTZTT113R0B	DIODE
	D1023	1SS376	DIODE
	D1024	1SS376	DIODE
	D1031	MA111	DIODE
	D1032	MA111	DIODE
	D1033	MA111	DIODE
	D1035	MA111	DIODE
	D1041	MA111	DIODE
	D1042	MA111	DIODE
	D1043	MA111	DIODE
	D1045	MA111	DIODE
	D1053	1SS376	DIODE
	D1075	MA111	DIODE
	D1101	MA30WA	DIODE
	D1121	DCC010	DIODE
	D1122	DTZTT113R0B	DIODE
	D1123	1SS376	DIODE
	D1124	1SS376	DIODE
	D1131	MA111	DIODE
	D1132	MA111	DIODE
	D1133	MA111	DIODE
	D1135	MA111	DIODE
	D1141	MA111	DIODE
	D1142	MA111	DIODE
	D1143	MA111	DIODE
	D1145	MA111	DIODE
	D1153	1SS376	DIODE
	D1176	MA111	DIODE
	D1201	MA30WA	DIODE
	D1221	DCC010	DIODE
	D1222	DTZTT113R0B	DIODE
	D1223	1SS376	DIODE
	D1224	1SS376	DIODE
	D1231	MA111	DIODE
	D1232	MA111	DIODE
	D1233	MA111	DIODE
	D1235	MA111	DIODE
	D1241	MA111	DIODE
	D1242	MA111	DIODE
	D1243	MA111	DIODE
	D1245	MA111	DIODE
	D1253	1SS376	DIODE
	D1276	MA111	DIODE
	D1303	MA142K	DIODE
	D1304	MA142K	DIODE

	Ref.No.	Part No.	Description
	D1305	MA142K	DIODE
	D1306	MA142K	DIODE
	D1307	MA4056M	DIODE
	D1320	DTZTT115R6B	DIODE
	D1321	MA4056M	DIODE
	D1351	DTZTT119R1C	DIODE
	D1353	HZT33-09F12	DIODE
	D1354	HZT33-09F12	DIODE
	D1355	ERZC05DK201U	VARISTOR
	D1357	EL02Z	DIODE
	D1358	MA704	DIODE
	D1359	MA111	DIODE
	D1362	MA111	DIODE
	D1363	MA111	DIODE
	D1366	MA4330M	DIODE
	D1367	MA4330M	DIODE
	D1390	DTZTT115R6B	DIODE
	D1391	DTZTT115R6B	DIODE
	D1392	DTZTT115R6B	DIODE
	D1401	MA111	DIODE
	D1402	MA111	DIODE
	D1403	MA111	DIODE
	D1404	MA111	DIODE
	D8050	MA8200H	DIODE
		COIL & TRANSFORMERS	
	L550	EXCELDR35C	LC COMBINATION
	L551	EXCELSR35S	LC COMBINATION
	L552	EXCELSR35S	LC COMBINATION
	L553	EXCELSR35S	LC COMBINATION
	L563	ELHKLB030B	COIL
	L564	ELHKLB031B	COIL
	L580	ELC12E821	CHOKE COIL
	L581	ELC18B272G	CHOKE COIL
	L596	TLH85815T	COIL
	L595	ELEY102KA	PEAKING COIL
	L599	ELEY102KA	PEAKING COIL
⚠	L601	ETS29AC1U9DC	COIL
	L671	TLU101K106	PEAKING COIL
	L673	TSK8031	FERRITE CORE
	L681	ELEY102KA	PEAKING COIL
⚠	L801	ELF18D656K	LINE FILTER
⚠	L802	ELF18D656K	LINE FILTER
	L803	TLPF066	CHOKE COIL
	L804	TLPF066	CHOKE COIL
	L806	TSK8031	FERRITE CORE
	L807	EXCELDR35C	LC COMBINATION
⚠	L850	TLP85708R	CHOKE COIL
	L860	EXCELDR35C	LC COMBINATION
	L861	EXCELDR35C	LC COMBINATION
	L863	EXCELDR35C	LC COMBINATION
	L864	TSK8031	FERRITE CORE
	L865	TSK8031	FERRITE CORE
	L866	TSK8031	FERRITE CORE
	L867	EXCELDR35C	LC COMBINATION
	L881	EXCELDR35C	LC COMBINATION
	L950	ELC18B271L	CHOKE COIL
	L1018	ELJFA1R0KB	CHIP COIL
	L1055	ELJNA82NMB	CHIP COIL
	L1118	ELJFA1R0KB	CHIP COIL

	Ref.No.	Part No.	Description
	L1155	ELJNA82NMB	CHIP COIL
	L1218	ELJFA1R0KB	CHIP COIL
	L1255	ELJNA82NMB	CHIP COIL
	L1321	TSK8029	FERRITE CORE
	L1330	TSK8029	FERRITE CORE
	L1351	TSK8029	FERRITE CORE
	L1356	TSK8029	FERRITE CORE
	L1358	TSK8029	FERRITE CORE
	L1360	TSK8029	FERRITE CORE
	L1361	TSK8029	FERRITE CORE
	L1362	TLU100K106	PEAKING COIL
	L1390	ELEXH151KA	PEAKING COIL
	T350	ETS28AD259AC	TRANSFORMER
⚠	T541	ETH19K178AM	TRANSFORMER
⚠	T542	ETS29AC1X9AC	TRANSFORMER
⚠	T601	TLFA00965	FLYBACK TRANSFORMER
⚠	T801	TLPA028	POWER TRANSFORMER
		CAPACITORS	
	C11	ECUX1C225ZFW	C 2.2UF Z 16V
	C13	ECUX1H102KBN	C 1000PF K 50V
	C14	ECUX1H104ZFX	C 0.1UF Z 50V
	C16	ECUX1H561KBN	C 560PF K 50V
	C17	TACBG2E683KT	C 0.068UF K 250V

Ref.No.	Part No.	Description			
C281	ECEA1HKG010	E	1UF		50V
C282	ECEA1HKG2R2	E	2.2UF		50V
C287	ECEA1HKG4R7	E	4.7UF		50V
C290	ECEA1HKG4R7	E	4.7UF		50V
C291	ECEA1HKG2R2	E	2.2UF		50V
C292	ECUX1H151JCG	C	150PF	J	50V
C294	ECUX1H103KBG	C	0.01UF	K	50V
C295	ECEA1CKG470	E	47UF		16V
C301	ECUX1H103KBG	C	0.01UF	K	50V
C302	ECUX1H104ZFX	C	0.1UF	Z	50V
C303	ECUX1H104ZFX	C	0.1UF	Z	50V
C350	ECEA2CGE101	E	100UF		160V
C351	ECUX1H120JCN	C	12PF	J	50V
C352	ECEA1HGE101	E	100UF		50V
C353	ECUX1H103KBG	C	0.01UF	K	50V
C354	ECKD3D222JBP	C	.2200PF	J	2KV
C355	ECKD2H151KB5	C	150PF	K	500V
C357	ECEA1EGN330	E	33UF		25V
C358	ECUX1H153KBX	C	0.015UF	K	50V
C359	ECUX1H102KBN	C	1000PF	K	50V
C360	ECUX1H563KBW	C	0.056UF	K	50V
C361	ECUX1H563KBW	C	0.056UF	K	50V
C362	ECUX1H104ZFX	C	0.1UF	Z	50V
C363	ECUX1H080DCN	C	8PF	D	50V
C364	ECUX1H103KBG	C	0.01UF	K	50V
C365	ECKD3D102KBP	C	1000PF	K	2KV
C366	ECEA1HGE101	E	100UF		50V
C367	ECEA1VGE101	E	100UF		35V
C370	ECQV1H224JL	P	0.22UF	J	50V
C371	ECUX1H103KBG	C	0.01UF	K	50V
C431	ECQV1104JM	P	0.1UF	J	100V
C432	ECQV1474JZ	P	0.47UF	J	100V
C433	ECEA1EGE101	E	100UF		25V
C434	ECEA1VGE221	E	220UF		35V
C435	ECEA1EGE101	E	100UF		25V
C436	ECQB1103KF	P	0.01UF	K	100V
C437	ECUX1C105ZFW	C	1UF	Z	16V
C438	ECUX1C105ZFW	C	1UF	Z	16V
C439	ECUX1H183KBX	C	0.018UF	K	50V
C530A	ECUX1H180JCN	C	18PF	J	50V
C530B	ECUX1H180JCN	C	18PF	J	50V
C531	ECQV1H104JM	P	0.1UF	J	50V

Ref.No.	Part No.	Description			
C532	ECEA1CGE101	E	100UF		16V
C533	ECA1AFQ102L	E	1000UF		10V
C540	ECEA1HGE470	E	47UF		50V
C541	ECKD2H332KB5	C	3300PF	K	500V
C542	ECEA1VGE101	E	100UF		35V
C543	ECUX1H104ZFX	C	0.1UF	Z	50V
C544	ECUX1H104ZFX	C	0.1UF	Z	50V
C545	ECEA1CGE100	E	10UF		16V
C546	ECUX1H104ZFX	C	0.1UF	Z	50V
C550	ECKD3F221KBP	C	220PF	K	3KV
C551	ECWH15H332HN	PP	3300PF	H	1.5KV
C552	ECWH15H332HN	PP	3300PF	H	1.5KV
C553	ECWH15H332HN	PP	3300PF	H	1.5KV
C554	ECWH15H332HN	PP	3300PF	H	1.5KV
C557	ECUX1H104ZFX	C	0.1UF	Z	50V
C558	ECUX1H103KBG	C	0.01UF	K	50V
C560	ECWF2134HBB	PP	0.13UF	H	200V
C561	ECWF2114HBB	PP	0.11UF	H	200V
C562	ECWF2274HBB	PP	0.27UF	H	200V
C563	ECWF2474HBB	PP	0.47UF	H	200V
C564	ECWF2185HBB	PP	1.8UF	H	200V
C565	ECEA1CGE101	E	100UF		16V
C566	ECWF2134HBB	PP	0.13UF	H	200V
C567	ECKD2H102KB5	C	1000PF	K	500V
C568	ECKD2H102KB5	C	1000PF	K	500V
C580	ECA1CFQ681L	E	680UF		16V
C581	ECA1CFQ681L	E	680UF		16V
C582	ECEA2AGE100	E	10UF		100V
C583	ECUX1H104ZFX	C	0.1UF	Z	50V
C585	TACBH2E224MT	C	0.22UF	M	250V
C586	ECUX1H104ZFX	C	0.1UF	Z	50V
C587	ECUX1H103KBG	C	0.01UF	K	50V
C588	TACBH2E224MT	C	0.22UF	M	250V
C589	ECUX1C105ZFX	C	1UF	Z	16V
C598	ECEA1HGN100	E	10UF		50V
C599	ECEA2EGE2R2	E	2.2UF		250V
C600	ECEA1CGE101	E	100UF		16V
C601	ECQV1H224JL	P	0.22UF	J	50V
C602	ECUX1H473KBW	C	0.047UF	K	50V
C603	ECWH12H272HS	PP	2700PF	H	1.2KV
C604	ECWH15H122HN	PP	1200PF	H	1.5KV
C605	ECWH15H122HN	PP	1200PF	H	1.5KV
C606	ECWH12H272HS	PP	2700PF	H	1.2KV
C607	ECKD3F221KBP	C	220PF	K	3KV
C620	ECUX1H102KBN	C	1000PF	K	50V
C650	ECEA2CGE100	E	10UF		160V
C660	ECEA2CGE2R2	E	2.2UF		160V
C670	ECUX1H103KBG	C	0.01UF	K	50V
C671	ECEA2VGE4R7	E	4.7UF		350V
C672	ECQE2104KF	P	0.1UF	K	200V
C673	ECKD2H103ZU	C	0.01UF	Z	500V
C674	ECUX1C104KBX	C	0.1UF	K	16V
C675	ECWF2334HBB	PP	0.33UF	H	200V
C676	ECEA1CGE222	E	2200UF		16V
C677	ECQE1184JF	P	0.18UF	J	100V
C678	ECUX1H333KBX	C	0.033UF	K	50V
C679	ECEA1HGN3R3	E	3.3UF		50V
C680	ECEA1CGE220	E	22UF		16V
C681	ECUX1H104ZFX	C	0.1UF	Z	50V
C682	ECUX1H104ZFX	C	0.1UF	Z	50V
C683	ECUX1C334JBW	C	0.33UF	J	16V
C684	ECEA1HGE3R3	E	3.3UF		50V

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C685	ECUX1H390JCG	C	39PF	J	50V	C886	ECEA1CGE101	E	100UF		16V
C686	ECUX1H104ZFX	C	0.1UF	Z	50V	C887	ECQE2563JF	P	0.056UF	J	200V
C690	ECUX1H104ZFX	C	0.1UF	Z	50V	C888	ECEA2EGE4R7	E	4.7UF		250V
C691	ECUX1H104ZFX	C	0.1UF	Z	50V	C890	ECKD2H122KB5	C	1200PF	K	500V
⚠ C801	ECQU2A105MVZ	PP	1UF	M	250V	C891	ECQE2335KF	P	3.3UF	K	200V
⚠ C802	ECKDRS222ME	C	2200PF	M		C892	ECKD2H103ZU	C	0.01UF	Z	500V
⚠ C803	ECKDRS222ME	C	2200PF	M		C894	ECEA0JGE101	E	100UF		6.3V
⚠ C805	ECQU2A105MVZ	PP	1UF	M	250V	C898	ECQE2684KF	P	0.68UF	K	200V
⚠ C807	ECKDRS102KB	C	1000PF	K		C901	ECOS2EB471BB	E	470UF		250V
C811	ECUX1H222KBN	C	2200PF	K	50V	C902	TACCZ335P630	P	3.3UF	K	630V
C812	ECUX1H223KBX	C	0.022UF	K	50V	C903	TACCZ335P630	P	3.3UF	K	630V
C816	ECKD3D561JBP	C	560PF	J	2KV	C904	ECEA1EGE101	E	100UF		25V
C820	ECWF4105JZ	PP	1UF	J	400V	C906	ECUX1H104ZFX	C	0.1UF	Z	50V
C821	ECQE6473JZ3M	P	0.047UF	J	600V	C921	ECEA1EGE101	E	100UF		25V
C822	ECEA1HGE331	E	330UF		50V	C940	ECUX1H472KBG	C	4700PF	K	50V
C824	ECEA1HGE470	E	47UF		50V	C941	ECUX1H152KBN	C	1500PF	K	50V
C825	TACBK2A224MT	C	0.22UF	M	100V	C942	ECQV1H104JL	P	0.1UF	J	50V
C825	TACCY184P50V	C	0.18UF		50V	C943	ECEA0JGE471	E	470UF		6.3V
C826	ECUX1H223KBX	C	0.022UF	K	50V	C944	ECEA1EGE470	E	47UF		25V
C827	ECUX1H681KBN	C	680PF	K	50V	C990	ECUX1E334ZFW	C	0.33UF	Z	25V
C828	ECEA1HGE470	E	47UF		50V	C991	ECUX1E334ZFW	C	0.33UF	Z	25V
C829	ECEA1HGE4R7	E	4.7UF		50V	C992	ECEA1CGE100	E	10UF		16V
⚠ C830	ECKDRS472ME	C	4700PF	M		C993	ECEA1CGE100	E	10UF		16V
⚠ C831	ECKDRS472ME	C	4700PF	M		C994	ECEA1CGE331	E	330UF		16V
C832	ECKD3D271KBP	C	270PF	K	2KV	C1001	ECEA1CGE100	E	10UF		16V
C833	ECUX1H472KBG	C	4700PF	K	50V	C1002	ECEA1CGE100	E	10UF		16V
C834	ECUX1H471KBN	C	470PF	K	50V	C1003	ECEA1CGE470	E	47UF		16V
C835	ECEA2AGE100	E	10UF		100V	C1004	ECUX1H103KBG	C	0.01UF	K	50V
C840	ECQV1H104JM	P	0.1UF	J	50V	C1005	ECUX1C105ZFW	C	1UF	Z	16V
C841	ECUX1H103KBG	C	0.01UF	K	50V	C1006	ECUX1H104ZFX	C	0.1UF	Z	50V
C842	ECQV1224JM	P	0.22UF	J	100V	C1008	TACCJ393P100	C	0.039UF		100V
C843	ECQV1H334JL	P	0.33UF	J	50V	C1009	ECUX1H103KBG	C	0.01UF	K	50V
C844	ECUX1C224KBW	C	0.22UF	K	16V	C1010	ECEA1CGE470	E	47UF		16V
C850	TACAY2E108MA	E	1000UF		250V	C1011	ECEA1CGE101	E	100UF		16V
C851	ECOS2CA331AB	E	330UF		160V	C1012	ECEA1CGE100	E	10UF		16V
C852	ECKD3A561KBP	C	560PF	K	1KV	C1013	ECUX1H103KBG	C	0.01UF	K	50V
C853	ECEA1HGE222	E	2200UF		50V	C1014	ECUX1H103KBG	C	0.01UF	K	50V
C854	ECEA1EGE472	E	4700UF		25V	C1015	ECUX1C105ZFW	C	1UF	Z	16V
C855	ECEA1EGE222	E	2200UF		25V	C1017	ECEA1CGE101	E	100UF		16V
C856	ECEA1CGE222	E	2200UF		16V	C1021	ECUX1H103KBG	C	0.01UF	K	50V
C857	ECEA1EGE472	E	4700UF		25V	C1031	ECEA0JKG221	E	220UF		6.3V
C858	ECEA2AGE221	E	220UF		100V	C1032	ECUX1H103KBG	C	0.01UF	K	50V
C859	ECEA1VGE101	E	100UF		35V	C1035	ECEA1HGN3R3	E	3.3UF		50V
C860	ECEA1EGE221	E	220UF		25V	C1036	ECUX1H102KBN	C	1000PF	K	50V
C861	ECEA1CGE221	E	220UF		16V	C1040	ECUX1H104ZFX	C	0.1UF	Z	50V
C862	ECEA1AGE102	E	1000UF		10V	C1041	ECEA0JKG221	E	220UF		6.3V
C863	ECEA1EGE221	E	220UF		25V	C1042	ECUX1H103KBG	C	0.01UF	K	50V
C865	ECEA1EGE101	E	100UF		25V	C1044	ECUX1H104ZFX	C	0.1UF	Z	50V
C866	ECEA1VGE101	E	100UF		35V	C1045	ECUX1H104ZFX	C	0.1UF	Z	50V
C867	ECEA1HGE330	E	33UF		50V	C1046	ECEA1HGE010	E	1UF		50V
C868	ECEA1HGE330	E	33UF		50V	C1047	ECUX1C105ZFW	C	1UF	Z	16V
C869	ECEA1HGE100	E	10UF		50V	C1048	ECEA1CGE100	E	10UF		16V
C870	ECEA2AGE220	E	22UF		100V	C1051	ECUX1H560JCG	C	56PF	J	50V
C871	ECEA1CGE470	E	47UF		16V	C1054A	TACBH2E224MT	C	0.22UF	M	250V
C872	ECUX1H103KBG	C	0.01UF	K	50V	C1054B	TACBH2E224MT	C	0.22UF	M	250V
C873	ECUX1H121JCG	C	120PF	J	50V	C1055	ECKD2H102KB5	C	1000PF	K	500V
C880	ECUX1H121JCG	C	120PF	J	50V	C1071	TACBG2E683KT	C	0.068UF	K	250V
C881	ECUX1H102KBN	C	1000PF	K	50V	C1072	ECEA2CGE010	E	1UF		160V
C882	ECUX1H151JCG	C	150PF	J	50V	C1073	ECUX1H470JCG	C	47PF	J	50V
C883	ECEA1EGE470	E	47UF		25V	C1101	ECEA1CGE100	E	10UF		16V
C884	ECUX1H332KBN	C	3300PF	K	50V	C1102	ECEA1CGE100	E	10UF		16V
C885	ECEA1VGE470	E	47UF		35V	C1103	ECEA1CGE470	E	47UF		16V

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C1104	ECUX1H103KBG	C	0.01UF	K	50V	C1272	ECEA2CGE010	E	1UF		160V
C1105	ECUX1C105ZFW	C	1UF	Z	16V	C1273	ECUX1H470JCG	C	47PF	J	50V
C1106	ECUX1H104ZFX	C	0.1UF	Z	50V	C1301	ECKD3D332JBP	C	3300PF	J	2KV
C1108	TACCJ393P100	C	0.039UF		100V	C1302	TCUX2H101JCM	C	100PF	J	500V
C1109	ECUX1H103KBG	C	0.01UF	K	50V	C1303	ECUX1H560JCG	C	56PF	J	50V
C1110	ECEA1CGE470	E	47UF		16V	C1305	ECUX1H102KBN	C	1000PF	K	50V
C1112	ECEA1CGE100	E	10UF		16V	C1307	ECUX1H102KBN	C	1000PF	K	50V
C1113	ECUX1H103KBG	C	0.01UF	K	50V	C1308	ECUX1H102KBN	C	1000PF	K	50V
C1114	ECUX1H103KBG	C	0.01UF	K	50V	C1309	ECUX1H560JCG	C	56PF	J	50V
C1115	ECUX1C105ZFW	C	1UF	Z	16V	C1311	ECUX1H103KBG	C	0.01UF	K	50V
C1117	ECEA1CGE101	E	100UF		16V	C1312	ECUX1H103KBG	C	0.01UF	K	50V
C1121	ECUX1H103KBG	C	0.01UF	K	50V	C1314	ECUX1H103KBG	C	0.01UF	K	50V
C1131	ECEA0JKG221	E	220UF		6.3V	C1320	TACCG102P200	C	1000PF		200V
C1132	ECUX1H103KBG	C	0.01UF	K	50V	C1321	ECUX1H102KBN	C	1000PF	K	50V
C1135	ECEA1HGN3R3	E	3.3UF		50V	C1322	ECUX1H101JCG	C	100PF	J	50V
C1136	ECUX1H102KBN	C	1000PF	K	50V	C1330	TACCJ103P200	C	0.01UF		200V
C1140	ECUX1H104ZFX	C	0.1UF	Z	50V	C1331	ECUX1H103KBG	C	0.01UF	K	50V
C1141	ECEA0JKG221	E	220UF		6.3V	C1332	ECEA0JKG470	E	47UF		6.3V
C1142	ECUX1H103KBG	C	0.01UF	K	50V	C1333	ECUX1H103KBG	C	0.01UF	K	50V
C1144	ECUX1H104ZFX	C	0.1UF	Z	50V	C1334	ECUX1H103KBG	C	0.01UF	K	50V
C1145	ECUX1H104ZFX	C	0.1UF	Z	50V	C1335	ECUX1H103KBG	C	0.01UF	K	50V
C1146	ECEA1HGE010	E	1UF		50V	C1336	ECEA1CKG470	E	47UF		16V
C1148	ECEA1CGE100	E	10UF		16V	C1337	ECUX1H103KBG	C	0.01UF	K	50V
C1151	ECUX1H560JCG	C	56PF	J	50V	C1338	ECUX1H103KBG	C	0.01UF	K	50V
C1154A	TACBH2E224MT	C	0.22UF	M	250V	C1339	ECEA2CGE220	E	22UF		160V
C1154B	TACBH2E224MT	C	0.22UF	M	250V	C1340	ECKD2H471KB5	C	470PF	K	500V
C1155	ECKD2H102KB5	C	1000PF	K	500V	C1341	ECKD2H103ZU	C	0.01UF	Z	500V
C1171	TACBG2E683KT	C	0.068UF	K	250V	C1342	ECEA2EGE010	E	1UF		250V
C1172	ECEA2CGE010	E	1UF		160V	C1344	ECUX1H103KBG	C	0.01UF	K	50V
C1173	ECUX1H470JCG	C	47PF	J	50V	C1345	ECEA1HKG010	E	1UF		50V
C1201	ECEA1CGE100	E	10UF		16V	C1346	ECEA1HKG010	E	1UF		50V
C1202	ECEA1CGE100	E	10UF		16V	C1347	ECEA1CKG220	E	22UF		16V
C1203	ECEA1CGE470	E	47UF		16V	C1348	ECUX1H103KBG	C	0.01UF	K	50V
C1204	ECUX1H103KBG	C	0.01UF	K	50V	C1349	ECEA2DGE100	E	10UF		200V
C1205	ECUX1C105ZFW	C	1UF	Z	16V	C1350	ECEA2CGE220	E	22UF		160V
C1206	ECUX1H104ZFX	C	0.1UF	Z	50V	C1351	ECEA1HGE100	E	10UF		50V
C1208	TACCJ393P100	C	0.039UF		100V	C1352	ECQE2104KF	P	0.1UF	K	200V
C1209	ECUX1H103KBG	C	0.01UF	K	50V	C1353	ECUX1H220JCN	C	22PF	J	50V
C1210	ECEA1CGE470	E	47UF		16V	C1354	ECQE10473KF	P	0.047UF	K	1KV
C1212	ECEA1CGE100	E	10UF		16V	C1355	ECUX1H102KBN	C	1000PF	K	50V
C1213	ECUX1H103KBG	C	0.01UF	K	50V	C1356	ECUX1H103KBG	C	0.01UF	K	50V
C1214	ECUX1H103KBG	C	0.01UF	K	50V	C1357	ECKD3D272KBP	C	2700PF	K	2KV
C1215	ECUX1C105ZFW	C	1UF	Z	16V	C1358	TACCG102P200	C	1000PF		200V
C1217	ECEA1CGE101	E	100UF		16V	C1359	ECUX1H683KBW	C	0.068UF	K	50V
C1221	ECUX1H103KBG	C	0.01UF	K	50V	C1360	ECEA0JGE101	E	100UF		6.3V
C1231	ECEA0JKG221	E	220UF		6.3V	C1362	ECUX1H103KBG	C	0.01UF	K	50V
C1232	ECUX1H103KBG	C	0.01UF	K	50V	C1363	ECEA1CGE101	E	100UF		16V
C1235	ECEA1HGN3R3	E	3.3UF		50V	C1364	ECEA1CGE470	E	47UF		16V
C1236	ECUX1H102KBN	C	1000PF	K	50V	C1365	ECUX1H103KBG	C	0.01UF	K	50V
C1240	ECUX1H104ZFX	C	0.1UF	Z	50V	C1366	ECUX1H102KBN	C	1000PF	K	50V
C1241	ECEA0JKG221	E	220UF		6.3V	C1370	ECEA1EGE470	E	47UF		25V
C1242	ECUX1H103KBG	C	0.01UF	K	50V	C1371	TACBJ2H221KT	C	220PF	K	500V
C1244	ECUX1H104ZFX	C	0.1UF	Z	50V	C1372	TACBJ2H221KT	C	220PF	K	500V
C1245	ECUX1H104ZFX	C	0.1UF	Z	50V	C1373	TACCJ102P500	C	1000PF		500V
C1246	ECEA1HGE010	E	1UF		50V	C1390	ECUX1H103KBG	C	0.01UF	K	50V
C1247	ECUX1C105ZFW	C	1UF	Z	16V	C1391	ECUX1H473KBW	C	0.047UF	K	50V
C1248	ECEA1CGE100	E	10UF		16V	C1392	ECUX1H330JCG	C	33PF	J	50V
C1251	ECUX1H560JCG	C	56PF	J	50V	C1393	ECUX1H103KBG	C	0.01UF	K	50V
C1254A	TACBH2E224MT	C	0.22UF	M	250V	C1394	ECEA1CGE101	E	100UF		16V
C1254B	TACBH2E224MT	C	0.22UF	M	250V	C1395	ECUX1H330JCG	C	33PF	J	50V
C1255	ECKD2H102KB5	C	1000PF	K	500V	C1396	TACCJ102P500	C	1000PF		500V
C1271	TACBG2E683KT	C	0.068UF	K	250V	C1397	ECEA0JGE101	E	100UF		6.3V

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
C1398	ECUX1H101JCG	C 100PF J 50V			
C1401	ECUX1H103KBG	C 0.01UF K 50V			
C1402	ECUX1H103KBG	C 0.01UF K 50V			
C1403	ECUX1H103KBG	C 0.01UF K 50V			
C1404	ECUX1H220JCN	C 22PF J 50V			
C8001	ECUX1H102KBN	C 1000PF K 50V			
C8002	ECUX1H273KBX	C 0.027UF K 50V			
	RESISTORS				
C1304	ERJ6GEY0R00	M 0 OHM 1/10W			
D560	ERJ6GEY0R00	M 0 OHM 1/10W			
D1011	ERJ6GEY0R00	M 0 OHM 1/10W			
J2	ERJ6GEY0R00	M 0 OHM 1/10W			
J1018	ERJ6GEY0R00	M 0 OHM 1/10W			
J301	ERJ8GCY0R00	M 0 OHM 1/8W			
J303	ERJ8GCY0R00	M 0 OHM 1/8W			
J304	ERJ8GCY0R00	M 0 OHM 1/8W			
J305	ERJ8GCY0R00	M 0 OHM 1/8W			
J503	ERJ6GEY0R00	M 0 OHM 1/10W			
J504	ERJ6GEY0R00	M 0 OHM 1/10W			
J505	ERJ6GEY0R00	M 0 OHM 1/10W			
J509	ERJ6GEY0R00	M 0 OHM 1/10W			
J602	ERJ8GCY0R00	M 0 OHM 1/8W			
J603	ERJ8GCY0R00	M 0 OHM 1/8W			
J604	ERJ8GCY0R00	M 0 OHM 1/8W			
J1001	ERD25TC0	C 0 OHM 1/4W			
J1002	ERJ6GEY0R00	M 0 OHM 1/10W			
R11	ERJ6ENF1002	M 10K OHM F 1/10W			
R12	ERJ6ENF4703	M 470K OHM F 1/10W			
R13	ERJ6ENF1002	M 10K OHM F 1/10W			
R14	ERJ6ENF3301	M 3.3K OHM F 1/10W			
R15	ERDS1FJ183	C 18K OHM J 1/2W			
R16	ERJ6ENF10R0	M 10 OHM F 1/10W			
R18	ERDS1FJ273	C 27K OHM J 1/2W			
R19	ERJ6ENF4702	M 47K OHM F 1/10W			
R20	ERJ6ENF4702	M 47K OHM F 1/10W			
R21	ERJ6GEYJ333	M 33K OHM J 1/10W			
R23	ERJ6GEYJ105	M 1M OHM J 1/10W			
R24	ERJ6ENF4703	M 470K OHM F 1/10W			
R25	ERJ6ENF1000	M 100 OHM F 1/10W			
R26	ERDS2TJ101	C 100 OHM J 1/4W			

Ref.No.	Part No.	Description			
R226					
R231	ERJ6GEYJ102	M	1K OHM	J	1/10W
R232	ERJ6GEYJ102	M	1K OHM	J	1/10W
R233	ERJ6GEYJ102	M	1K OHM	J	1/10W
R234	ERJ6GEYJ102	M	1K OHM	J	1/10W
R235	ERJ6GEY0R00	M	0 OHM		1/10W
R236	ERJ6GEY0R00	M	0 OHM		1/10W
R237	ERJ6GEY0R00	M	0 OHM		1/10W
R271	ERJ6GEYJ223	M	22K OHM	J	1/10W
R272	ERJ6GEYJ223	M	22K OHM	J	1/10W
R273	ERJ6GEYJ223	M	22K OHM	J	1/10W
R274	ERJ6GEYJ223	M	22K OHM	J	1/10W
R282	ERJ6ENF4992	M	49.9K OHM	F	1/10W
R283	ERJ6ENF8451	M	8.45K OHM	F	1/10W
R284	ERJ6ENF8451	M	8.45K OHM	F	1/10W
R286	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R288	ERJ6ENF1501	M	1.5K OHM	F	1/10W
R292	ERJ6GEYJ433	M	43K OHM	J	1/10W
R293	ERJ6GEYJ103	M	10K OHM	J	1/10W
R301	ERJ6ENF1502	M	15K OHM	F	1/10W
R302	ERJ6ENF1502	M	15K OHM	F	1/10W
R303	ERJ6ENF1002	M	10K OHM	F	1/10W
R304	ERJ6ENF1002	M	10K OHM	F	1/10W
R305	ERJ6GEYJ102	M	1K OHM	J	1/10W
R306	ERJ6GEYJ154	M	150K OHM	J	1/10W
R307	ERJ6GEYJ154	M	150K OHM	J	1/10W
R350	ERX3FJX3R9D	M	3.9 OHM	J	3W
R351	ERJ6GEYJ223	M	22K OHM	J	1/10W
R352	ERJ6ENF1432	M	14.3K OHM	F	1/10W
R354	ERJ6ENF5621	M	5.62K OHM	F	1/10W
R355	ERJ6ENF3922	M	39.2K OHM	F	1/10W
R356	ERJ6ENF3242	M	32.4K OHM	F	1/10W
R357	ERJ8ENF1502	M	15K OHM	F	1/8W
R358	ERJ6GEYJ333	M	33K OHM	J	1/10W
R359	ERDS2TJ184	C	180K OHM	J	1/4W
R360	ERDS2TJ184	C	180K OHM	J	1/4W
R361	ERDS2TJ184	C	180K OHM	J	1/4W
R362	ERDS2TJ154	C	150K OHM	J	1/4W
R363	ERDS2TJ154	C	150K OHM	J	1/4W
R364	ERDS2TJ274	C	270K OHM	J	1/4W
R365	ERDS2TJ274	C	270K OHM	J	1/4W
R366	ERDS1FJ224	C	220K OHM	J	1/2W
R367	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R368	ERJ6ENF1003	M	100K OHM	F	1/10W
R369	ERJ6ENF5622	M	56.2K OHM	F	1/10W
R370	ERJ6GEYJ564	M	560K OHM	J	1/10W
R371	ERJ6GEYJ272	M	2.7K OHM	J	1/10W
R372	ERJ6GEYJ393	M	39K OHM	J	1/10W
R373	ERJ6GEYJ393	M	39K OHM	J	1/10W
R374	ERJ6GEYJ103	M	10K OHM	J	1/10W
R375	ERDS1FJ102	C	1K OHM	J	1/2W
R376	ERJ6GEYJ102	M	1K OHM	J	1/10W
R377	ERJ6GEYJ100	M	10 OHM	J	1/10W
R378	ERJ6GEYJ563	M	56K OHM	J	1/10W
R379	ERJ6GEYJ154	M	150K OHM	J	1/10W
R430	ERJ6ENF2942	M	29.4K OHM	F	1/10W
R431	EROS2CKF1582	M	15.8K OHM	F	1/4W
R432	EROS2CKF4021	M	4.02K OHM	F	1/4W
R433	ERJ6ENF3321	M	3.32K OHM	F	1/10W
R434	EROS2CKF3571	M	3.57K OHM	F	1/4W
R435	ERX2SJ1R2	M	1.2 OHM	J	2W
R436	ERG2SJ181	M	180 OHM	J	2W
R437	ERDS2TJ1R0	C	1 OHM	J	1/4W
R438	ERJ6GEYJ123	M	12K OHM	J	1/10W
R439	ERJ6GEYJ104	M	100K OHM	J	1/10W
R440	ERDS2T00	C	0 OHM		1/4W
R528	ERJ6ENF3322	M	33.2K OHM	F	1/10W
R529	ERJ6ENF1102	M	11K OHM	F	1/10W
R530	ERQ12AJ4R7	F	4.7 OHM	J	1/2W
R531	ERJ6GEYJ103	M	10K OHM	J	1/10W
R532	ERJ6GEYJ103	M	10K OHM	J	1/10W
R533	ERJ6GEYJ473	M	47K OHM	J	1/10W
R534	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R535	ERJ6GEYJ102	M	1K OHM	J	1/10W
R536	ERD25FJ101K	C	100 OHM	J	1/4W
R537	ERJ6GEYJ100	M	10 OHM	J	1/10W
R538	ERX2SJR33	M	0.33 OHM	J	2W
R539	ERJ6GEYJ101	M	100 OHM	J	1/10W
R540	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R541	ERJ6ENF3241	M	3.24K OHM	F	1/10W
R542	ERJ6GEYJ563	M	56K OHM	J	1/10W
R543	ERJ6ENF1022	M	10.2K OHM	F	1/10W
R544	ERG3FJ101	M	100 OHM	J	3W
R545	ERG1SJ561	M	560 OHM	J	1W
R546	ERJ6GEYJ470	M	47 OHM	J	1/10W
R547	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R548	ERX3FJX1R5D	M	1.5 OHM	J	3W
R549	ERX3FJX1R8D	M	1.8 OHM	J	3W
R550	ERX3FJX6R8D	M	6.8 OHM	J	3W
R551	ERX3FJX1R2D	M	1.2 OHM	J	3W
R553	ERJ6ENF3402	M	34K OHM	F	1/10W
R554	ERJ6ENF3322	M	33.2K OHM	F	1/10W
R555	ERJ6ENF1872	M	18.7K OHM	F	1/10W
R556	ERJ6ENF2741	M	2.74K OHM	F	1/10W
R557	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R558	ERJ6GEYJ184	M	180K OHM	J	1/10W
R560	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R561	ERJ6GEYJ100	M	10 OHM	J	1/10W
R562	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R563	ERJ6GEYJ100	M	10 OHM	J	1/10W
R564	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R565	ERJ6GEYJ100	M	10 OHM	J	1/10W
R566	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R567	ERJ6GEYJ100	M	10 OHM	J	1/10W
R568	ERDS2TJ104	C	100K OHM	J	1/4W
R569	ERDS2TJ104	C	100K OHM	J	1/4W
R570	ERDS2TJ104	C	100K OHM	J	1/4W
R571	ERDS2TJ104	C	100K OHM	J	1/4W
R572	ERG2SJ221	M	220 OHM	J	2W
R573	ERDS1FJ221	C	220 OHM	J	1/2W
R575	ERJ6GEYJ271	M	270 OHM	J	1/10W
R577	ERJ6GEYJ271	M	270 OHM	J	1/10W
R580	ERQ12AJR12HK	F	0.12 OHM	J	1/2W
R581	ERQ12AJR12HK	F	0.12 OHM	J	1/2W
R582	ERX2SJ3R3	M	3.3 OHM	J	2W
R583	ERJ6GEYJ392	M	3.9K OHM	J	1/10W
R584	ERX2FJ3R3	M	3.3 OHM	J	2W
R585	ERG1SJ390	M	39 OHM	J	1W
R587	ERJ6GEYJ153	M	15K OHM	J	1/10W
R588	ERJ6GEYJ472	M	4.7K OHM	J	1/10W

Ref.No.	Part No.	Description				
R590	ERD25FJ153K	C	15K	OHM	J	1/4W
R591	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W
R592	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R593	ERJ12YJ5R6	M	5.6	OHM	J	1/2W
R593A	ERJ12YJ5R6	M	5.6	OHM	J	1/2W
R598	ERQ12AJ220	F	22	OHM	J	1/2W
R599	ERQ12AJ270	F	27	OHM	J	1/2W
R600	ERD25FJ330K	C	33	OHM	J	1/4W
R601	ERJ6GEYJ471	M	470	OHM	J	1/10W
R602	ERJ12YJ222	M	2.2K	OHM	J	1/2W
R604	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R605	ERJ6GEYJ471	M	470	OHM	J	1/10W
R606	ERJ6GEYJ153	M	15K	OHM	J	1/10W
R607	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R608	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W
R609	ERQ14AJ100	F	10	OHM	J	1/4W
R610	ERJ6GEYJ391	M	390	OHM	J	1/10W
R611	ERJ6GEYJ182	M	1.8K	OHM	J	1/10W
R612	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R650	ERD25FJ100K	C	10	OHM	J	1/4W
R652	ERQ12AJ101	F	100	OHM	J	1/2W
R663	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R664	ERJ6ENF5601	M	5.6K	OHM	F	1/10W
R670	ERD25FJ330K	C	33	OHM	J	1/4W
R671	ERD25FJ105K	C	1M	OHM	J	1/4W
R674	ERJ6GEYJ471	M	470	OHM	J	1/10W
R675	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R676	ERQ14AJ220	F	22	OHM	J	1/4W
R677	ERJ6GEYJ471	M	470	OHM	J	1/10W
R678	ERJ6GEYJ331	M	330	OHM	J	1/10W
R679	ERJ12YJ101	M	100	OHM	J	1/2W
R680	ERJ6GEYJ333	M	33K	OHM	J	1/10W
R681	EROS2CKF2493	M	249K	OHM	F	1/4W
R682	EROS2CKF2493	M	249K	OHM	F	1/4W
R683	EROS2CKF2493	M	249K	OHM	F	1/4W
R684	EROS2CKF2493	M	249K	OHM	F	1/4W
R685	ERJ6ENF4021	M	4.02K	OHM	F	1/10W
R686	ERJ6GEYJ223	M	22K	OHM	J	1/10W
R687	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W
R688	EROS2CKF2493	M	249K	OHM	F	1/4W
R689	ERJ6GEYJ560	M	56	OHM	J	1/10W
R690	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W
R691	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W
R692	ERJ6ENF3922	M	39.2K	OHM	F	1/10W
R693	ERJ6ENF4751	M	4.75K	OHM	F	1/10W
R694	ERJ6GEYJ472	M	4.7K	OHM	J	1/10W
R695	ERJ6ENF3923	M	392K	OHM	F	1/10W
R696	ERJ6GEYJ225	M	2.2M	OHM	J	1/10W
R801	ERC12AGK394	S	390K	OHM	K	1/2W
R802	ERJ6GEYJ273	M	27K	OHM	J	1/10W
R805	ERJ6GEYJ222	M	2.2K	OHM	J	1/10W
R807	ERJ8GCYJ562	M	5.6K	OHM	J	1/8W
R808	ERJ6GEY0R00	M	0	OHM		1/10W
R810	ERJ6GEYJ820	M	82	OHM	J	1/10W
R811	ERDS1FJ224	C	220K	OHM	J	1/2W
R812	ERDS1FJ224	C	220K	OHM	J	1/2W
R813	ERJ6GEYJ152	M	1.5K	OHM	J	1/10W
R814	ERJ6GEYJ330	M	33	OHM	J	1/10W
R815	ERJ6GEYJ681	M	680	OHM	J	1/10W
R817	ERW2PKR18	W	0.18	OHM	K	2W
R818	ERJ6GEY0R00	M	0	OHM		1/10W
R819	ERDS1FJ473	C	47K	OHM	J	1/2W

Ref.No.	Part No.	Description				
R820	ERG2SJ183	M	18K	OHM	J	2W
R821	TARRS3B333J1	M	33K	OHM	J	3W
R822	ERJ6GEYJ182	M	1.8K	OHM	J	1/10W
R823	ERJ6GEYJ222	M	2.2K	OHM	J	1/10W
R824	ERJ6GEYJ681	M	680	OHM	J	1/10W
R825	ERJ6GEYJ821	M	820	OHM	J	1/10W
R826	ERDS1FJ474	C	470K	OHM	J	1/2W
R827	ERG2SJ183	M	18K	OHM	J	2W
R828	ERJ6GEY0R00	M	0	OHM		1/10W
R830	ERJ6GEYJ104	M	100K	OHM	J	1/10W
R831	ERQ12AJ1R0	F	1	OHM	J	1/2W
R832	ERJ8GCYJ201	M	200	OHM	J	1/8W
R833	ERJ6ENF1023	M	102K	OHM	F	1/10W
R834	ERW2PKR22	W	0.22	OHM	K	2W
R835	ERJ6ENF4751	M	4.75K	OHM	F	1/10W
R836	ERJ6GEYJ822	M	8.2K	OHM	J	1/10W
R837	ERJ6ENF2492	M	24.9K	OHM	F	1/10W
R838	ERDS1FJ151	C	150	OHM	J	1/2W
R839	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R840	ERJ6GEY0R00	M	0	OHM		1/10W
R841	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R842	ERDS2TJ271	C	270	OHM	J	1/4W
R843	ERJ6ENF1822	M	18.2K	OHM	F	1/10W
R844	ERJ6ENF4751	M	4.75K	OHM	F	1/10W
R845	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R846	ERG3FJ471	M	470	OHM	J	3W
R847	ERDS2TJ151	C	150	OHM	J	1/4W
R848	ERJ6ENF2001	M	2K	OHM	F	1/10W
R849	ERJ6ENF1331	M	1.33K	OHM	F	1/10W
R850	ERQ12AJR10HK	F	0.1	OHM	J	1/2W
R851	ERQ12AJR10HK	F	0.1	OHM	J	1/2W
R852	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R853	ERQ12AJR10HK	F	0.1	OHM	J	1/2W
R854	ERQ12AJR15K	F	0.15	OHM	J	1/2W
R855	ERQ12AJR10HK	F	0.1	OHM	J	1/2W
R856	ERQ12AJR10HK	F	0.1	OHM	J	1/2W
R857	ERQ12AJR10HK	F	0.1	OHM	J	1/2W
R858	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R859	ERJ8GCYJ821	M	820	OHM	J	1/8W
R860	ERJ6ENF1243	M	124K	OHM	F	1/10W
R861	ERJ6ENF4531	M	4.53K	OHM	F	1/10W
R862	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R863	ERDS2TJ271	C	270	OHM	J	1/4W
R864	ERJ6ENF4992	M	49.9K	OHM	F	1/10W
R865	ERJ6ENF4871	M	4.87K	OHM	F	1/10W
R866	ERJ6GEYJ102	M	1K	OHM	J	1/10W
R867	ERDS2TJ271	C	270	OHM	J	1/4W
R868	ERJ6ENF2552	M	25.5K	OHM	F	1/10W
R869	ERJ6ENF4751	M	4.75K	OHM	F	1/10W
R870	ERJ6GEYJ332	M	3.3K	OHM	J	1/10W
R871	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R872	ERJ6GEYJ103	M	10K	OHM	J	1/10W
R873	ERJ6GEYJ222	M	2.2K	OHM	J	1/10W
R874	ERJ6GEYJ392	M	3.9K	OHM	J	1/10W
R875	ERJ6GEYJ823	M	82K	OHM	J	1/10W
R876	ERJ6ENF1001	M	1K	OHM	F	1/10W
R877	ERJ6GEYJ562	M	5.6K	OHM	J	1/10W
R878	ERJ6GEYJ104	M	100K	OHM	J	1/10W
R879	ERJ6GEYJ331	M	330	OHM	J	1/10W
R880	ERDS2TJ102	C	1K	OHM	J	1/4W
R881	ERD25FJ330K	C	33	OHM	J	1/4W
R882	ERJ6GEYJ103	M	10K	OHM	J	1/10W

Ref.No.	Part No.	Description			
R883	ERDS2TJ272	C	2.7K OHM	J	1/4W
R884	ERJ6ENF1002	M	10K OHM	F	1/10W
R885	ERJ6ENF1002	M	10K OHM	F	1/10W
R886	ERJ6GEYJ103	M	10K OHM	J	1/10W
R887	ERG1SJ683	M	68K OHM	J	1W
R888	ERJ6ENF1211	M	1.21K OHM	F	1/10W
R888A	ERJ6ENF1002	M	10K OHM	F	1/10W
R889	ERJ6ENF1821	M	1.82K OHM	F	1/10W
R889A	ERJ6ENF1002	M	10K OHM	F	1/10W
R890	ERQ14AJ220	F	22 OHM	J	1/4W
R891	ERJ6ENF1001	M	1K OHM	F	1/10W
R892	ERJ6ENF2553	M	255K OHM	F	1/10W
R893A	ERJ6ENF1002	M	10K OHM	F	1/10W
R894	ERJ6GEYJ563	M	56K OHM	J	1/10W
R895A	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R895B	ERJ6ENF3321	M	3.32K OHM	F	1/10W
R896	ERJ6GEYJ182	M	1.8K OHM	J	1/10W
R897	ERDS2TJ272	C	2.7K OHM	J	1/4W
R898	ERG3FJ103	M	10K OHM	J	3W
R899A	ERG1SJ221	M	220 OHM	J	1W
R899B	ERJ6GEYJ473	M	47K OHM	J	1/10W
R901	ERG2FJ153	M	15K OHM	J	2W
R902	ERDS2TJ333	C	33K OHM	J	1/4W
R903	ERDS2TJ102	C	1K OHM	J	1/4W
R904	ERJ6GEYJ103	M	10K OHM	J	1/10W
R905	ERDS2TJ274	C	270K OHM	J	1/4W
R906	ERJ6GEYJ473	M	47K OHM	J	1/10W
R907	ERJ8GCYJ102	M	1K OHM	J	1/8W
R908	ERJ8GCYJ102	M	1K OHM	J	1/8W
R909	ERDS2TJ471	C	470 OHM	J	1/4W
R910	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R911	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R912	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R913	ERJ6GEYJ471	M	470 OHM	J	1/10W
R914	ERJ8GEYK2R2	M	2.2 OHM	K	1/8W
R915	ERJ6GEYJ820	M	82 OHM	J	1/10W
R986	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R987	ERJ6GEYJ103	M	10K OHM	J	1/10W
R988	ERJ6GEYJ102	M	1K OHM	J	1/10W
R989	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R990	ERJ6ENF6042	M	60.4K OHM	F	1/10W
R991	ERJ6ENF9092	M	90.9K OHM	F	1/10W
R992	ERJ6ENF4322	M	43.2K OHM	F	1/10W
R993	ERJ6ENF1001	M	1K OHM	F	1/10W
R994	ERJ6ENF6800	M	680 OHM	F	1/10W
R995	ERJ6ENF2321	M	2.32K OHM	F	1/10W
R996	ERJ6ENF3321	M	3.32K OHM	F	1/10W
R997	ERJ6ENF2741	M	2.74K OHM	F	1/10W
R998	ERJ6ENF2741	M	2.74K OHM	F	1/10W
R999	ERDS2TJ2R7	C	2.7 OHM	J	1/4W
R999A	ERQ14AJ100	F	10 OHM	J	1/4W
R1001	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1002	ERJ6GEYJ471	M	470 OHM	J	1/10W
R1003	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1004	ERJ6GEYJ182	M	1.8K OHM	J	1/10W
R1011	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1012	ERJ6ENF3001	M	3K OHM	F	1/10W
R1013	ERJ6ENF2001	M	2K OHM	F	1/10W
R1017	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1020	ERJ6GEY0R00	M	0 OHM		1/10W
R1021	ERJ6GEYJ271	M	270 OHM	J	1/10W
R1022	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1027	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1028	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1032	ERJ12YJ471	M	470 OHM	J	1/2W
R1033	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1034	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1035	ERJ6GEY0R00	M	0 OHM		1/10W
R1036	ERJ6ENF86R6	M	86.6 OHM	F	1/10W
R1037	ERJ6GEY0R00	M	0 OHM		1/10W
R1042	ERJ12YJ471	M	470 OHM	J	1/2W
R1043	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1051	ERJ6GEYJ300	M	30 OHM	J	1/10W
R1052	ERJ6ENF2870	M	287 OHM	F	1/10W
R1053	ERJ6ENF1101	M	1.1K OHM	F	1/10W
R1054	ERDS2TJ102	C	1K OHM	J	1/4W
R1056	ERDS1FJ101	C	100 OHM	J	1/2W
R1058	ERJ6GEYJ123	M	12K OHM	J	1/10W
R1070	ERJ12YJ224	M	220K OHM	J	1/2W
R1071	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1072	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1075	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1076	ERJ6ENF1503	M	150K OHM	F	1/10W
R1079	ERJ6ENF7321	M	7.32K OHM	F	1/10W
R1101	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1102	ERJ6GEYJ471	M	470 OHM	J	1/10W
R1103	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1104	ERJ6GEYJ182	M	1.8K OHM	J	1/10W
R1120	ERJ6GEY0R00	M	0 OHM		1/10W
R1121	ERJ6GEYJ271	M	270 OHM	J	1/10W
R1122	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1127	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1128	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1132	ERJ12YJ471	M	470 OHM	J	1/2W
R1133	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1134	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1135	ERJ6GEY0R00	M	0 OHM		1/10W
R1136	ERJ6ENF86R6	M	86.6 OHM	F	1/10W
R1137	ERJ6GEY0R00	M	0 OHM		1/10W
R1142	ERJ12YJ471	M	470 OHM	J	1/2W
R1143	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1151	ERJ6GEYJ300	M	30 OHM	J	1/10W
R1152	ERJ6ENF2870	M	287 OHM	F	1/10W
R1153	ERJ6ENF1101	M	1.1K OHM	F	1/10W
R1154	ERDS2TJ102	C	1K OHM	J	1/4W
R1156	ERDS1FJ101	C	100 OHM	J	1/2W
R1158	ERJ6GEYJ123	M	12K OHM	J	1/10W
R1170	ERJ12YJ224	M	220K OHM	J	1/2W
R1171	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1172	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1175	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1176	ERJ6ENF1503	M	150K OHM	F	1/10W
R1179	ERJ6ENF7321	M	7.32K OHM	F	1/10W
R1180	ERJ6GEYJ302	M	3K OHM	J	1/10W
R1181	ERJ6GEYJ133	M	13K OHM	J	1/10W
R1201	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1202	ERJ6GEYJ471	M	470 OHM	J	1/10W
R1203	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1204	ERJ6GEYJ182	M	1.8K OHM	J	1/10W
R1220	ERJ6GEY0R00	M	0 OHM		1/10W
R1221	ERJ6GEYJ271	M	270 OHM	J	1/10W
R1222	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1227	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1228	ERJ6GEYJ220	M	22 OHM	J	1/10W

Ref.No.	Part No.	Description			
R1232	ERJ12YJ471	M	470 OHM	J	1/2W
R1233	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1234	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1235	ERJ6GEY0R00	M	0 OHM		1/10W
R1236	ERJ6ENF86R6	M	86.6 OHM	F	1/10W
R1237	ERJ6GEY0R00	M	0 OHM		1/10W
R1242	ERJ12YJ471	M	470 OHM	J	1/2W
R1243	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1251	ERJ6GEYJ300	M	30 OHM	J	1/10W
R1252	ERJ6ENF2870	M	287 OHM	F	1/10W
R1253	ERJ6ENF1101	M	1.1K OHM	F	1/10W
R1254	ERDS2TJ102	C	1K OHM	J	1/4W
R1256	ERDS1FJ121	C	120 OHM	J	1/2W
R1258	ERJ6GEYJ123	M	12K OHM	J	1/10W
R1270	ERJ12YJ224	M	220K OHM	J	1/2W
R1271	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1272	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1275	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1276	ERJ6ENF1503	M	150K OHM	F	1/10W
R1279	ERJ6ENF7321	M	7.32K OHM	F	1/10W
R1303	ERJ6GEYJ271	M	270 OHM	J	1/10W
R1304	ERJ6GEYJ271	M	270 OHM	J	1/10W
R1305	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1306	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1307	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1311	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R1312	ERJ6GEYJ682	M	6.8K OHM	J	1/10W
R1320	ERJ6GEYJ681	M	680 OHM	J	1/10W
R1321	ERJ6GEYJ681	M	680 OHM	J	1/10W
R1322	ERJ6GEYJ681	M	680 OHM	J	1/10W
R1323	ERJ6GEYJ471	M	470 OHM	J	1/10W
R1324	ERJ6GEYJ331	M	330 OHM	J	1/10W
R1335	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1338	ERJ6GEYJ104	M	100K OHM	J	1/10W
R1339	ERJ6GEYJ104	M	100K OHM	J	1/10W
R1340	ERJ6GEYJ272	M	2.7K OHM	J	1/10W
R1341	ERDS1FJ393	C	39K OHM	J	1/2W
R1342	ERJ12YJ561	M	560 OHM	J	1/2W
R1343	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1344	ERJ6ENF2202	M	22K OHM	F	1/10W
R1347	ERJ6GEY0R00	M	0 OHM		1/10W
R1348	ERDS2CKF5113	M	511K OHM	F	1/4W
R1350	ERDS1FJ225	C	2.2M OHM	J	1/2W
R1351	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1352	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1353	ERJ12YJ563	M	56K OHM	J	1/2W
R1354	ERJ6ENF1203	M	120K OHM	F	1/10W
R1355	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1356	ERJ12YJ125	M	1.2M OHM	J	1/2W
R1357	ERJ6ENF2003	M	200K OHM	F	1/10W
R1358	ERDS1FJ390	C	39 OHM	J	1/2W
R1359	ERJ8GEY0R00	M	0 OHM		1/8W
R1360	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1361	ERJ6GEYJ474	M	470K OHM	J	1/10W
R1362	ERJ6GEYJ223	M	22K OHM	J	1/10W
R1363	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1365	ERJ6GEYJ223	M	22K OHM	J	1/10W
R1366	ERJ6GEYJ562	M	5.6K OHM	J	1/10W
R1367	ERJ6GEYJ562	M	5.6K OHM	J	1/10W
R1368	ERJ6GEYJ824	M	820K OHM	J	1/10W
R1369	ERJ6GEYJ103	M	10K OHM	J	1/10W
R1370	ERJ6GEYJ103	M	10K OHM	J	1/10W

Ref.No.	Part No.	Description			
R1371	ERJ6GEYJ680	M	68 OHM	J	1/10W
R1372	ERJ12YJ184	M	180K OHM	J	1/2W
R1373	ERJ12YJ184	M	180K OHM	J	1/2W
R1374	ERJ12YJ184	M	180K OHM	J	1/2W
R1375	ERJ12YJ184	M	180K OHM	J	1/2W
R1376	ERJ12YJ184	M	180K OHM	J	1/2W
R1377	ERDS1FJ394	C	390K OHM	J	1/2W
R1378	ERJ6ENF1822	M	18.2K OHM	F	1/10W
R1379	ERJ6GEYJ474	M	470K OHM	J	1/10W
R1380	TAR11CJ565B	M	5.6M OHM	J	1/2W
R1381	TAR11CJ565B	M	5.6M OHM	J	1/2W
R1382	TAR11CJ565B	M	5.6M OHM	J	1/2W
R1383	ERJ6ENF8062	M	80.6K OHM	F	1/10W
R1384	ERJ6ENF5902	M	59K OHM	F	1/10W
R1385	ERJ6GEYJ472	M	4.7K OHM	J	1/10W
R1386	ERJ6ENF6981	M	6.98K OHM	F	1/10W
R1387	ERJ6ENF1212	M	12.1K OHM	F	1/10W
R1388	ERJ6GEYJ332	M	3.3K OHM	J	1/10W
R1389	ERJ6GEYJ100	M	10 OHM	J	1/10W
R1390	ERJ6GEYJ334	M	330K OHM	J	1/10W
R1391	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R1392	ERJ6GEYJ152	M	1.5K OHM	J	1/10W
R1393	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1396	ERJ6GEYJ101	M	100 OHM	J	1/10W
R1398	ERJ6GEYJ221	M	220 OHM	J	1/10W
R1399	ERJ6GEYJ220	M	22 OHM	J	1/10W
R1401	ERJ6GEYJ271	M	270 OHM	J	1/10W
R1402	ERJ6GEYJ271	M	270 OHM	J	1/10W
R1404	ERJ6GEYJ684	M	680K OHM	J	1/10W
R1405	ERJ6GEYJ684	M	680K OHM	J	1/10W
R1406	ERJ6GEYJ684	M	680K OHM	J	1/10W
R1407	ERJ6GEYJ102	M	1K OHM	J	1/10W
R1410	ERJ6ENF4750	M	475 OHM	F	1/10W
R1411	ERJ6ENF4750	M	475 OHM	F	1/10W
R1412	ERJ6ENF4750	M	475 OHM	F	1/10W
R8000	ERJ6GEYJ681	M	680 OHM	J	1/10W
R8001	ERJ6GEYJ272	M	2.7K OHM	J	1/10W
R8008	ERJ6GEYJ102	M	1K OHM	J	1/10W
R8009	ERJ6GEYJ102	M	1K OHM	J	1/10W
R8010	ERJ6ENF4533	M	453K OHM	F	1/10W
R8011	ERJ6ENF2323	M	232K OHM	F	1/10W
R8012	ERJ6ENF4753	M	475K OHM	F	1/10W
R8013	ERJ6GEYJ331	M	330 OHM	J	1/10W
R8014	ERDS2TJ124	C	120K OHM	J	1/4W
R8015	ERDS2TJ683	C	68K OHM	J	1/4W
R8016	ERG2SJ183	M	18K OHM	J	2W
R8018	ERJ6GEYJ103	M	10K OHM	J	1/10W
R8019	ERJ6GEYJ103	M	10K OHM	J	1/10W
R8020	ERJ6GEYJ103	M	10K OHM	J	1/10W
R8030	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R8031	ERJ6GEYJ123	M	12K OHM	J	1/10W
R8032	ERJ6GEYJ103	M	10K OHM	J	1/10W
R8033	ERJ6GEYJ103	M	10K OHM	J	1/10W
R8034	ERJ6GEYJ223	M	22K OHM	J	1/10W
R8035	ERJ6GEYJ223	M	22K OHM	J	1/10W
R8036	ERJ6GEYJ102	M	1K OHM	J	1/10W
R8037	ERJ6GEYJ102	M	1K OHM	J	1/10W
R8038	ERJ6GEYJ222	M	2.2K OHM	J	1/10W
R8039	ERJ6GEYJ103	M	10K OHM	J	1/10W
R8040	ERJ6GEYJ103	M	10K OHM	J	1/10W
R8041	ERJ6GEYJ123	M	12K OHM	J	1/10W
R8042	ERJ6GEYJ123	M	12K OHM	J	1/10W

Ref.No.	Part No.	Description
R8043	ERJ6GEYJ272	M 2.7K OHM J 1/10W
R8050	ERDS1FJ332	C 3.3K OHM J 1/2W
R8051	ERDS1FJ332	C 3.3K OHM J 1/2W
R8052	ERDS1FJ332	C 3.3K OHM J 1/2W
R8053	ERDS1FJ332	C 3.3K OHM J 1/2W
R8054	ERX2SJ1RO	M 1 OHM J 2W
R8055	ERJ6GEYJ822	M 8.2K OHM J 1/10W
	OTHERS	
	TESA010	CRT PCB HOLDER
	TESA013	IC SPRING
	THEC0019	SCREW(FOR CRT PCB HOLDER)
	THE902N	D-SUB SCREW
	THTF001	SCREW
	TMKK014	INSULATION TUBE
	TMKK027	DOUBLE FACE TAPE
	TMK87907	MICA SHEET
	TMM6428-1	LEAD CLAMPER
	TSXX023	PHONO PIN CABLE(RED)
	TSXX024	PHONO PIN CABLE(GREY)
	TSXX025	PHONO PIN CABLE(BLUE)
	TUCC5077	SHIELD CASE(CRT PCB)
	TUCC5078	SHIELD PLATE(CRT PCB)
	TUC87574	AC INLET BRACKET
	TUWF021	BNC TERMINAL BRACKET
	XTV3+12J	SCREW
	XWG3F10	WASHER
	XYE3+EJ10	SCREW
CL1	TJEA021	HEAT SINK TERMINAL
D1356	TAGDSP141T	SPARK GAP
D1360	TAG10003	SPARK GAP
FG1	TJEA013	EARTH TERMINAL
FG2	TJC85341	EARTH LUG
FG3	TJC85341	EARTH LUG
FG4	TJC85341	EARTH LUG
FG11	TJC85341	EARTH LUG
FG12	TJC85341	EARTH LUG
FG13	TJC85341	EARTH LUG
FG14	TJC85341	EARTH LUG
FS801	TJC85502T	FUSE HOLDER
FS803	TJC85502T	FUSE HOLDER
JC101	TJC85341	EARTH LUG
N2	TJSF09616	16P CONNECTOR
N11A	TSXX034	3P CONNECTOR ASSY
N12	TXAJTV5P486	5P CONNECTOR ASSY
N102A	TJS9A849A	7P CONNECTOR(L-TYPE)
N102B	TJS9A849A	7P CONNECTOR
N105A	TJSF07910	10P CONNECTOR(L-TYPE)
N105B	TJSF08010	10P CONNECTOR
N231	TJSF10400	BNC TERMINAL
N232	TJSF10400	BNC TERMINAL
⚠ N351	TJS8A5130	CRT SOCKET
N601A	TJS9A850A	22P CONNECTOR
N601B	TJS9A850A	22P CONNECTOR
N651A	TJCD003	TERMINAL
N651B	TJCD003	TERMINAL
⚠ N801	TJS8A9361	AC SOCKET
N802A	TJS8A8303	4P SOCKET
N802B	TJS8A8303	4P SOCKET
N991	TJS118590	2P CONNECTOR
N1001	TJSF10400	BNC TERMINAL
N1010A	TJSF09327	27P CONNECTOR
N1010B	TJSF09427	27P CONNECTOR(L-TYPE)
N1012A	TJS8A4291	PHONO PIN CONNECTOR
N1012B	TJS8A4291	PHONO PIN CONNECTOR
N1013B	TJSF09330	30P CONNECTOR
N1016	TJC85342T	LUG TERMINAL
N1017A	TJC85342T	LUG TERMINAL
N1017B	TJC85342T	LUG TERMINAL
N1041	TJSF10515	15P CONNECTOR(D-SUB)
N1042	TJSF07504	4P CONNECTOR
N1043	EMC50464M	4P CONNECTOR
N1101	TJSF10400	BNC TERMINAL
N1112A	TJS8A4291	PHONO PIN CONNECTOR
N1112B	TJS8A4291	PHONO PIN CONNECTOR
N1201	TJSF10400	BNC TERMINAL
N1212A	TJS8A4291	PHONO PIN CONNECTOR
N1212B	TJS8A4291	PHONO PIN CONNECTOR
N510-1	TEL302-9	TERMINAL
N510-2	TEL302-9	TERMINAL
N510-3	TEL302-9	TERMINAL
N510-4	TEL302-9	TERMINAL
N901-1	TEL302-9	TERMINAL
N901-2	TEL302-9	TERMINAL
N901-3	TEL302-9	TERMINAL
N902-1	TEL302-9	TERMINAL
N902-2	TEL302-9	TERMINAL
N902-3	TEL302-9	TERMINAL
⚠ PC830	TLP721FD4GRH	PHOTO COUPLER
⚠ PC831	TLP75004	PHOTO COUPLER
Q16	UN11004	FUSE
Q674	UN11008	FUSE
Q675	UN11008	FUSE
RL561	TSE80892	RELAY
S672	TAGA0002	SPARK GAP
S1001	TAGDSP201MF	SPARK GAP
S1101	TAGDSP201MF	SPARK GAP
S1201	TAGDSP201MF	SPARK GAP
SW102	EVQPB005K	SWITCH
SW103	EVQPB005K	SWITCH
SW104	EVQPB005K	SWITCH
SW105	EVQPB005K	SWITCH
⚠ SW801	ESB91234A	SWITCH(POWER)
TP1	TJC85340T	PIN
TP2	TJC85340T	PIN
TP3	TJC85340T	PIN

SAFETY PRECAUTIONS

1 CAUTION:

No modification of any circuit should be attempted. Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guide lines.

2 SAFETY CHECK

Care should be taken while servicing this CRT display because of the high voltage used in the deflection circuits. These voltages are exposed in such areas as the associated flyback and yoke circuits.

3 FIRE & SHOCK HAZARD

3-1 Insert an isolation transformer between the CRT display and AC power line before servicing the chassis.

3-2 In servicing pay attention to original lead dress especially in the high voltage circuit. If a short circuit is found, replace all parts which have been overheated as a result of the short circuit.

3-3 All the protective devices must be reinstalled per original design.

3-4 Soldering must be inspected for possible cold solder joints, frayed leads, damaged insulation, solder splashes or sharp solder points. Be certain to remove all foreign material.

4 LEAKAGE CURRENT COLD CHECK

4-1 Unplug the AC cord and connect a jumper between the two prongs on the plug.

4-2 Turn the CRT display power switch "on".

4-3 Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metallic part on the CRT display such as the metal frame, screwheads, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be 1.5 megohm minimum.

5 LEAKAGE CURRENT HOT CHECK

5-1 Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during this check.

5-2 Connect a 1500 ohm, 10 watt resistor, paralleled by a 0.15μF capacitor between each exposed metallic part and a good earth ground (as shown in Fig.1).

5-3 Use an AC voltmeter with 1000 ohm/volt or more sensitivity and measure the AC voltage across the combination 1500 ohm resistor and 0.15μF capacitor.

5-4 Move the resistor connection to each exposed metallic part and measure the voltage.

5-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.

5-6 Voltage measured must not exceed 7.5 volt RMS, from any exposed metallic part to ground. A leakage current tester may be used in the above hot check, in which case any current measured must not exceed 5.0 milliamp. In the case of a measurement exceeding the 5.0 milliamp value, a rework is required to eliminate the chance of a shock hazard.

Note: High voltage is present when this CRT display is operating. Always discharge the anode of the picture tube to the display chassis to prevent shock hazard.

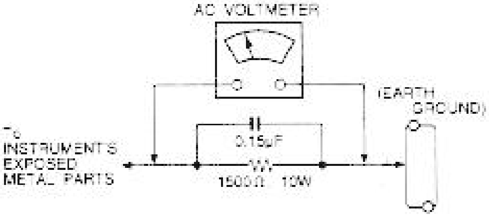


Fig.1

6 IMPLOSION PROTECTION

Picture tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage and scratching during installation. Use only Panasonic replacement picture tubes.

7 X-RADIATION

WARNING : The only potential source of X-Radiation is the picture tube. However when the high voltage circuitry is operating properly there is no possibility of X-Radiation problem. The basic precaution which must be exercised is to keep the high voltage at the following factory-recommended level.

Note: It is important to use an accurate periodically calibrated high voltage meter.

7-1 If can not be adjust (automatic) 27.0 kV at immediate service is required to prevent the possibility of premature component failure.

7-2 To prevent X-Radiation possibility it is essential to use the specified picture tube.

IMPORTANT SAFETY NOTICE

There are special components used in this CRT displays which are important for safety. These parts are identified by the international symbol ⚠ on the schematic diagram and on the replacement parts list. It is essential that these critical parts should be replaced with manufacture's specified parts to prevent X-RADIATION, shock, fire or other hazards. Do not modify the original design or this will void the original parts and labor guarantee.

GENERAL INFORMATION

1. OUTLINE

This monitor is 21 inch (20.0" viewable) multi-scan color CRT display with the following nice features.

Original SSP-LSI (Super Signal Processor) is newly introduced, which optimize the function.

2. FEATURES

2-1 SSP-LSI (Super Signal Processor) Mounted

Precise wave forms are generated for the correction of each geometric distortion.

2-2 Self Optimized-Picture Size and Position

Any non-preset timing will be roughly tuned by SSP-LSI for comfortable size and position.

2-3 Power Saving

Built-in Power Saving function based on VESA-DPMS standard.

Power energy shall be saved by controlling the circuit in accordance with power saving signal from computer.

2-4 OSD (On Screen Display) Function

OSD (5 Languages) function is new and excellent man-machine interface.

Anyone is able to set up the picture as he like through OSD menu.

2-5 Self Test Function

Self Testing picture comes out by pushing any key in the case of no-connection with computer or power saving operation.

This function shows if monitor is alive or not and can be used for self aging test.

2-6 Ergonomic Design

- Low emission design to meet MPR II & TCO'92
- ESF (Electrostatic filed) free coating on CRT

2-7 Line Harmonics Compliant with EN61000-3-2

2-8 Multi-Scan with Digital Technology

8-bit micro computer controls the circuit operation to meet with wide range signal of f_H=30~115kHz and f_V=50~160Hz.

So VGA, SVGA, XGA(1024X768), SXGA(1280X1024) and UXGA(1600X1200) up to 90Hz refresh rate are applicable.

2-9 1 Factory Preset (+7 Reservation),13 User Memories

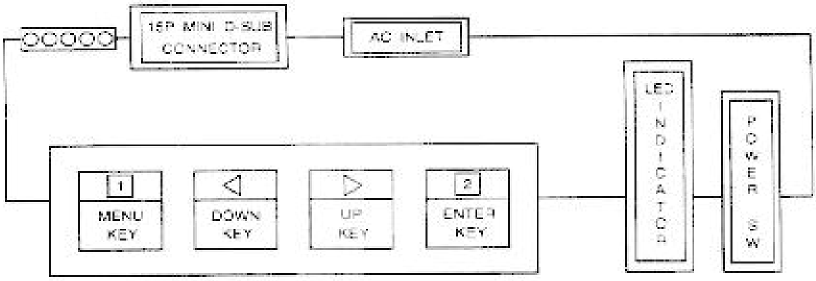
- 1 Standard modes are preset at the factory.
  7 modes are reserved at the factory.
- 13 user memories are available to set the user's own timing and display information.

2-10 Flat Face and Fine Dot Pitch

Flat face CRT with fine dot trio pitch 0.25mm (Horizontal: 0.218mm / Vertical: 0.130mm) gives a crispy and comfortable sight of the screen.

SPECIFICATION

1. DIAGRAM



1.1 POWER SW, LED, [1]-key (MENU), ◁-key (DOWN), ▷-key (UP), and [2]-key (ENTER) are located on the front panel.

1.2 Signal connectors and AC inlet are located on the back side of the cabinet.

1.3 OSD menu includes the following function.

CONTRAST BRIGHTNESS DEGAUSS
RECALL H. POSITION H. SIZE
V. POSITION V. SIZE V. PINCUSHION
TRAPEZOID PARALLELOGRAM ROTATION
COLOR TEMPERATURE DISPLAY FREQUENCY
VIDEO INPUT LEVEL VIDEO INPUT SELECT
H. MOIRE V. MOIRE LANGUAGES

※) CONTRAST can be directly controlled with ◁/▷-key.

※) With sync signal, OSD menu appears by pushing [1]-key and [2]-key.
Without sync signal, self test menu appears by pushing any key.

2. MECHANICAL SPECIFICATIONS

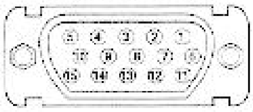
..... refer to the attached drawing

2.1 Dimension Height : 487 mm (typ.)
Width : 505 mm (typ.)
Depth : 519 mm (typ.)
2.2 Net Weight : 28.5 kg (typ.)
2.3 Maximum Viewable Phosphor Display Area
: 406X304 mm (min.)

3. CONNECTORS

3.1 Signal connector 15P Mini D-Sub connector x1
BNC CONNECTOR x5
3.2 AC inlet CEE 22 typed connector

<15P Mini D-Sub Pin assignment>



1 ... RED
2 ... GREEN
3 ... BLUE
4 ... GROUND
5 ... GROUND (DDC)
6 ... GROUND
7 ... GROUND
8 ... GROUND
9 ... – (OPEN)
10 ... GROUND
11 ... GROUND
12 ... SDA (DDC)
13 ... H. SYNC.
14 ... V. SYNC.
15 ... SCL (DDC)

4. CRT SPECIFICATIONS

Part No		M51KYY540X, Screen radius 2R (Diagonal=1440mm)
Type		21"(20.0" Viewable),90°,ø29.1,in-line gun
Cathode		New Impregnated Quick-heating Cathode
Dot Trio Pitch		0.25mm
Dot Pitch		0.218mm horizontal / 0.130mm vertical
Bulb		Dark Tint (Total Transmission=39.5%)
Face Coating		New AGRAS Coat
Shadow Mask		Advanced Invar Mask
Implosion Protection		Tension-band with Mounting Lugs
Focusing Method		Electrostatic
Focusing Lens		Bipotential
Convergence Method		Magnetic
Deflection Method		Magnetic
Phos-phor	Persistence	R,G,B Medium short persistence (Hi-EU RED)
	Red	x:0.635 (typical) y:0.333 (typical)
	Green	x:0.280 (typical) y:0.595 (typical)
	Blue	x:0.152 (typical) y:0.063 (typical)

5. ELECTRICAL SPECIFICATIONS

5.1 Standard conditions ... Except special items

Display image	Green, full "H" characters with a border line. (7 x 9 dots) Video signal : 100% duty Display area : 380 mm x 285 mm
Video signal level	0.7 V pp
Contrast, Brightness	Contrast : Max., Brightness : Center point
Ambient Temperature	20±5 °C (68 ± 9° F)
Input Voltage	AC 120 V, 60 Hz or AC 220 V 50 Hz
Terrestrial magnetism	Vertical field : northern hemisphere field 40μT (southern hemisphere field -40μT) Horizontal field : no field
Viewing direction	Parallel to the CRT axis
Measurements	After an initial warming up time of more than 30 minutes.
Ambient light	200±50 lX
Display mode	1600 x 1200 (93.75 kHz, 75.00 Hz)

5.2 POWER

5.2.1 Power supply ... Commercial power source

Input voltage	AC 90 - 132 V, AC 198 - 264 V
Power frequency	50 Hz ± 3 Hz 60 Hz ± 3 Hz
Input current	2.0 A Max. (at 100-120V AC), 1.5 A Max. (at 220-240V AC)
Inrush current (at 20° C)	25 A Max. (at 100-120V AC), 40 A Max. (at 220-240V AC)
Power consumption	160 W (Typ.)

5.2.2 Power Management for Power Saving

Power saving system is designed based upon VESA DPMS standard (Version 1.0)

1) Power consumption and recovery time.

*1 APM State	SIGNALS			MONITOR POWER CONSUMPTION	RECOVERY TIME TO ON STATE	INDICATOR
	H. Sync	V. Sync	VIDEO			
ON	*3 NORMAL	*3 NORMAL	*2 ACTIVE	*4 100%	——	Green
STAND-BY	No Sync or *5 < 6 kHz	> 40 Hz	BLANK	< 25 W	< 4S	Yellow
SUS-PEND	>10 kHz	No Sync or *5 < 20 Hz	BLANK	< 25 W	< 4S	Yellow
OFF	No Sync or *5 < 6 kHz	No Sync or *5 < 20 Hz	BLANK	< 8 W	< 20S	Yellow

** The transition time from ON state to each APM states is 5 seconds minimum.

*1 : APM : Advanced Power Management.

*2 : Measurement Condition of power consumption for ON state
DISPLAY IMAGE : WHITE full "H" characters (7 × 9 dots)

*3 : NORMAL : See "7.4 ACCEPTABLE TIMING".

*4 : Power Consumption is measured at AC 100-240V.

*5 : Power saving operation is done at less than specified value in the list.

5.3 Standard timing

- Following 1 mode is preset in the memory as standard timing at the factory and 7modes are reserved.
- Fig-1 shows a definition of timing and signal level.
- Electrical performance is specified based on 1600 x 1200 mode unless otherwise mentioned.

TIMING CHART

A	Period
B	Blanking
C	Sync Width
D	Back Porch
E	Active
F	Front Potch

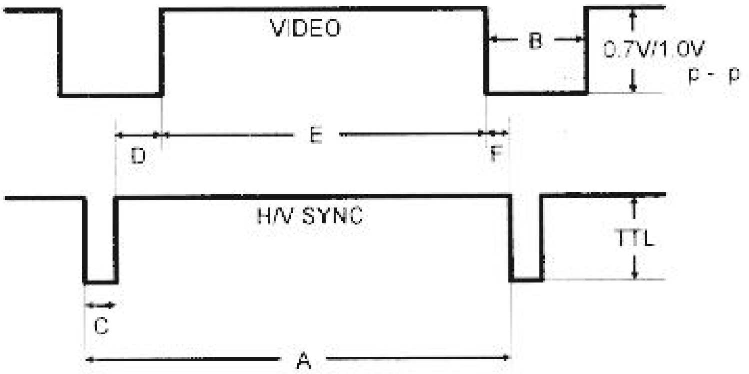


Fig.1

		PRESET	RESERVATION	RESERVATION
		MODE - 1	MODE - 2	MODE - 3
		1600 × 1200 (75)	640 × 480 (60)	640 × 480 (75)
DOT CLOCK		202.5000 MHz	25.1750 MHz	31.5000 MHz
H	f H	93.7500 kHz	31.4688 kHz	37.5000 kHz
	A - PERIOD	10.667 µs (2,160 dots)	31.778 µs (800 dots)	26.667 µs (840 dots)
	B - BLANKING TIME	2.755 µs (560 dots)	6.356 µs (160 dots)	6.349 µs (200 dots)
	C - SYNC WIDTH	0.948 µs (192 dots)	3.813 µs (96 dots)	2.032 µs (64 dots)
	D - BACK PORCH	1.501 µs (304 dots)	1.907 µs (48 dots)	3.810 µs (120 dots)
	E - ACTIVE TIME	7.901 µs (1,600 dots)	25.422 µs (640 dots)	20.317 µs (640 dots)
	F - FRONT PORCH	0.316 µs (64 dots)	0.636 µs (16 dots)	0.508 µs (16 dots)
V	f V	75.0000 Hz	59.9405 Hz	75.0000 Hz
	A - PERIOD	13.333 ms (1,250 lines)	16.683 ms (525 lines)	13.333 ms (500 lines)
	B - BLANKING TIME	0.533 ms (50 lines)	1.433 ms (45 lines)	0.533 ms (20 lines)
	C - SYNC WIDTH	0.032 ms (3 lines)	0.064 ms (2 lines)	0.080 ms (3 lines)
	D - BACK PORCH	0.491 ms (46 lines)	1.049 ms (33 lines)	0.427 ms (16 lines)
	E - ACTIVE TIME	12.800 ms (1,200 lines)	15.253 ms (480 lines)	12.800 ms (480 lines)
	F - FRONT PORCH	0.011 ms (1 lines)	0.318 ms (10 lines)	0.027 ms (1 lines)
SYNC POLARITY(H/V)		Positive / Positive	Negative / Negative	Negative / Negative

		RESERVATION	RESERVATION	RESERVATION
		MODE - 4	MODE - 5	MODE - 6
		1024 × 768 (75)	MAC 1152 × 870 (75)	1280 × 1024 (75)
DOT CLOCK		78.7500 MHz	100.0000 MHz	135.0000 MHz
H	f H	60.0229 kHz	68.6813 kHz	79.9763 kHz
	A - PERIOD	16.660 µs (1,312 dots)	14.560 µs (1,456 dots)	12.504 µs (1,688 dots)
	B - BLANKING TIME	3.657 µs (288 dots)	3.040 µs (304 dots)	3.022 µs (408 dots)
	C - SYNC WIDTH	1.219 µs (96 dots)	1.280 µs (128 dots)	1.067 µs (144 dots)
	D - BACK PORCH	2.235 µs (176 dots)	1.440 µs (144 dots)	1.837 µs (248 dots)
	E - ACTIVE TIME	13.003 µs (1,024 dots)	11.520 µs (1,152 dots)	9.481 µs (1,280 dots)
	F - FRONT PORCH	0.203 µs (16 dots)	0.320 µs (32 dots)	0.119 µs (16 dots)
V	f V	75.0286 Hz	75.0616 Hz	75.0247 Hz
	A - PERIOD	13.328 ms (800 lines)	13.322 ms (915 lines)	13.329 ms (1,066 lines)
	B - BLANKING TIME	0.533 ms (32 lines)	0.655 ms (45 lines)	0.525 ms (42 lines)
	C - SYNC WIDTH	0.050 ms (3 lines)	0.044 ms (3 lines)	0.038 ms (3 lines)
	D - BACK PORCH	0.466 ms (28 lines)	0.568 ms (39 lines)	0.475 ms (38 lines)
	E - ACTIVE TIME	12.795 ms (768 lines)	12.667 ms (870 lines)	12.804 ms (1,024 lines)
	F - FRONT PORCH	0.017 ms (1 lines)	0.044 ms (3 lines)	0.013 ms (1 lines)
SYNC POLARITY(H/V)		Positive / Positive	Negative / Negative	Positive / Positive

		RESERVATION	RESERVATION
		MODE - 7	MODE - 8
		1280 × 1024 (85)	1600 × 1200 (85)
DOT CLOCK		157.5000 MHz	229.5000 MHz
H	f H	91.1458 kHz	106.2500 kHz
	A - PERIOD	10.971 μs (1,728 dots)	9.412 μs (2.160 dots)
	B - BLANKING TIME	2.844 μs (448 dots)	2.440 μs (560 dots)
	C - SYNC WIDTH	1.016 μs (160 dots)	0.837 μs (192 dots)
	D - BACK PORCH	1.422 μs (224 dots)	1.325 μs (304 dots)
	E - ACTIVE TIME	8.127 μs (1.280 dots)	6.972 μs (1.600 dots)
	F - FRONT PORCH	0.406 μs (64 dots)	0.279 μs (64 dots)
V	f V	85.0241 Hz	85.0000 Hz
	A - PERIOD	11.761 ms (1,072 lines)	11.765 ms (1,250 lines)
	B - BLANKING TIME	0.527 ms (48 lines)	0.471 ms (50 lines)
	C - SYNC WIDTH	0.033 ms (3 lines)	0.028 ms (3 lines)
	D - BACK PORCH	0.483 ms (44 lines)	0.433 ms (46 lines)
	E - ACTIVE TIME	11.235 ms (1,024 lines)	11.294 ms (1,200 lines)
	F - FRONT PORCH	0.011 ms (1 lines)	0.009 ms (1 lines)
SYNC POLARITY(H/V)		Positive / Positive	Positive / Positive

		ADJUSTMENT	ADJUSTMENT	ADJUSTMENT
		GV3 - 1	GV3 - 2	GV3 - 3
DOT CLOCK		22.6000 MHz	64.0442 MHz	134.9800 MHz
H	f H	29.5039 KHz	54.0002 KHz	82.5061 KHz
	A - PERIOD	33.894 μs (766 dots)	18.518 μs (1.186 dots)	12.120 μs (1,636 dots)
	B - BLANKING TIME	6.018 μs (136 dots)	4.513 μs (289 dots)	3.230 μs (436 dots)
	C - SYNC WIDTH	4.115 μs (93 dots)	1.718 μs (110 dots)	1.096 μs (148 dots)
	D - BACK PORCH	1.593 μs (36 dots)	2.498 μs (160 dots)	1.852 μs (250 dots)
	E - ACTIVE TIME	27.876 μs (630 dots)	14.006 μs (897 dots)	8.890 μs (1,200 dots)
	F - FRONT PORCH	0.310 μs (7 dots)	0.297 μs (19 dots)	0.282 μs (38 dots)
V	f V	48.0520 Hz	77.0331 Hz	125.9635 Hz
	A - PERIOD	20.811 ms (614 lines)	12.981 ms (701 lines)	7.939 ms (655 lines)
	B - BLANKING TIME	0.915 ms (27 lines)	0.741 ms (40 lines)	0.485 ms (40 lines)
	C - SYNC WIDTH	0.102 ms (3 lines)	0.111 ms (6 lines)	0.048 ms (4 lines)
	D - BACK PORCH	0.712 ms (21 lines)	0.519 ms (28 lines)	0.364 ms (30 lines)
	E - ACTIVE TIME	19.896 ms (587 lines)	12.241 ms (661 lines)	7.454 ms (615 lines)
	F - FRONT PORCH	0.102 ms (3 lines)	0.111 ms (6 lines)	0.073 ms (6 lines)
SYNC POLARITY(H/V)		Negative / Negative	Negative / Negative	Negative / Negative

		ADJUSTMENT
		GV3 - 5
DOT CLOCK		241.2000 MHz
H	f H	115.4619 KHz
	A - PERIOD	8.661 μs (2,089 dots)
	B - BLANKING TIME	2.189 μs (528 dots)
	C - SYNC WIDTH	0.759 μs (183 dots)
	D - BACK PORCH	1.356 μs (327 dots)
	E - ACTIVE TIME	6.472 μs (1,561 dots)
	F - FRONT PORCH	0.075 μs (18 dots)
V	f V	164.9456 Hz
	A - PERIOD	6.063 ms (700 lines)
	B - BLANKING TIME	0.442 ms (51 lines)
	C - SYNC WIDTH	0.026 ms (3 lines)
	D - BACK PORCH	0.398 ms (46 lines)
	E - ACTIVE TIME	5.621 ms (649 lines)
	F - FRONT PORCH	0.017 ms (2 lines)
SYNC POLARITY(H/V)		Negative / Negative

5.4 Acceptable timing

- If your timing is within following specification, this CRT display can automatically function with a certain size and position.

Horizontal:
Sync frequency: 30.0 ~ 115.0 kHz
Blanking Time: ≥ 2.1 μs
Back Porch: ≥ 1.2 μs
Front Porch: ≤ Back Porch
Sync Width: ≥ 0.7 μs

Vertical:
Sync frequency: 50.0 ~ 160.0 Hz
Blanking Time: ≥ 0.44 ms
Back Porch: ≥ 0.4 ms
Sync Width: ≥ 0.02 ms

- Several items like size, position and distortion can be adjusted through OSD menu, and if you want to keep it, please push the key $\boxed{1}$ for memory, or keep the key untouched for about 20 seconds, it is automatically memorized.

NOTE : In case of RECALL, the key is untouched for about 30 seconds, RECALL function will be cancelled.

Please note, however, that there is the case you can not get the size and/or position you want, (for example, in case Display video Time is too short, you can't get bigger size of the image.)

- The CRT adopted in this CRT display is designed to minimize the moire phenomenon at suitable size for typical display modes. However, there might be a display format among many formats, in which the moire phenomenon appears on this display.

5.5 Signal level and input impedance

5.5.1 Video Signal level

- This CRT display is adjusted at the factory using 0.7V p-p Video Signal, Black level is 0V.
- This CRT display is compatible with 1.0V p-p Video Signal by using Video input level selection.

5.5.2 Sync Signal level

- H/V Separate, H/V Mixed : TTL level
- Sync on Green : 0.3 V p-p ± 0.015 V

5.5.3 Input impedance

- Video input: 75 Ω
- Sync input: ≥ 1 kΩ

5.6 Display performance

5.6.1 Display area

1) PRESET TIMING
MODE 1, 1600 x 1200 @75Hz
WIDTH : 380 mm ± 5 mm
HEIGHT : 285 mm ± 5 mm

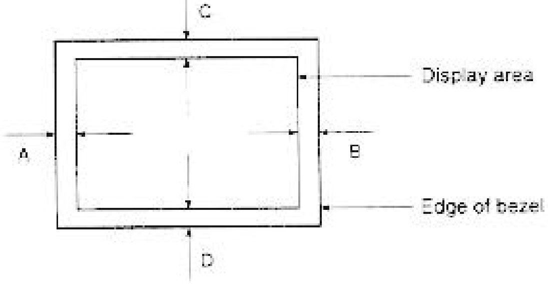
2) RESERVATION TIMING
MODE 2, 640 x 480 @60Hz
WIDTH : 380 mm ± 7 mm
HEIGHT : 285 mm ± 7 mm
MODE 3, 640 x 480 @75Hz
WIDTH : 380 mm ± 7 mm
HEIGHT : 285 mm ± 7 mm
MODE 4, 1024 x 768 @75Hz
WIDTH : 380 mm ± 7 mm
HEIGHT : 285 mm ± 7 mm
MODE 5, 1152 x 870 @75Hz
WIDTH : 380 mm ± 7 mm
HEIGHT : 285 mm ± 7 mm
MODE 6, 1280 x 1024 @75Hz
WIDTH : 355 mm ± 7 mm
HEIGHT : 284 mm ± 7 mm
MODE 7, 1280 x 1024 @85Hz
WIDTH : 355 mm ± 7 mm
HEIGHT : 284 mm ± 7 mm
MODE 8, 1600 x 1200 @85Hz
WIDTH : 380 mm ± 7 mm
HEIGHT : 285 mm ± 7 mm

3) FULL SCAN
WIDTH : 406 mm
HEIGHT : 304 mm

5.6.2 Centering

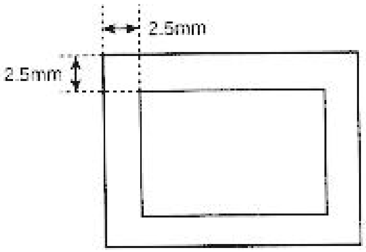
1) PRESET TIMING (MODE1)
|A – B| ≤ 4.0 mm
|C – D| ≤ 4.0 mm

2) RESERVATION TIMING (MODE2~8)
|A – B| ≤ 7.0 mm
|C – D| ≤ 7.0 mm



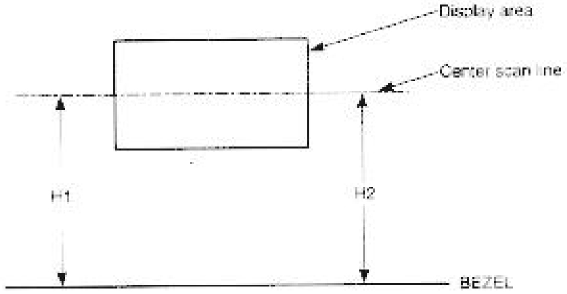
5.6.3 Distortion

Inside 2.5mm frame



5.6.4 Rotation

$|H1 - H2| \leq 2.5$ mm



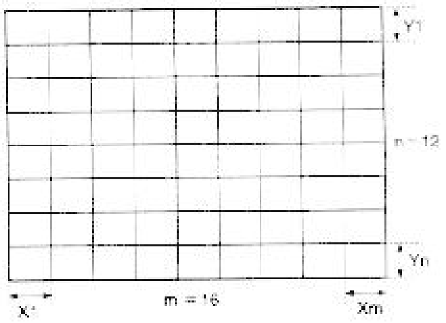
5.6.5 Linearity

Horizontal linearity

$$= \frac{X\,max. - X\,min.}{X\,max. + X\,min.} \times 100\ \% \leq 7\ \%$$

Vertical linearity

$$= \frac{Y\,max. - Y\,min.}{Y\,max. + Y\,min.} \times 100\ \% \leq 6\ \%$$



<Conditions>

Display image ------- crosshatch pattern

Maximum and minimum values should not be adjacent to each other.

X max. is maximum value among X1~Xm
X min. is minimum value among X1~Xm

Y max. is maximum value among Y1~Yn
Y min. is minimum value among Y1~Yn

5.7 General performance

5.7.1 Maximum pixel clock

250.0 MHz

5.7.2 Maximum luminance

Value	100 cd/m² (min.) for 5% white field at the center of the display area. 90 cd/m² (min.) for 100% white field at the center of the display area. Specified by 9300 K + 8 MPCD
Conditions	Display image : White flat field Luminance : Max. (Contrast : Max.) (Brightness : Center point)

5.7.3 Minimum luminance

Value	≤ 17 cd/m² at the center of the display area. Specified by 9300 K + 8 MPCD
Conditions	Display image : White full flat field Luminance : Min. (Contrast : Min.) (Brightness : Center point)

5.7.4 Brightness variation

Value	75 % (Min.) Variation = C/A X 100
Conditions	Display image : White full flat field Luminance : Max. (Contrast : Max.) (Brightness : Center point) A ; Luminance at center position C ; Luminance at position of lowest brightness

5.7.5 Display area regulation

	Display area variation	Range of variation
Due to Luminance	within 1.0 %	17~100 cd/m² (white flat field)
Due to Power Supply	within 0.5 %	AC : 90-132 V or 198-264 V
Due to Temperature	within 1.5%	20 ° C ± 20° C

5.7.6 Color Point

< Conditions >

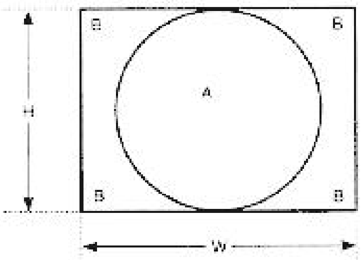
Display image : White flat field at the center of the display area.

Luminance : Brightness center point.

Contrast	max	min
Value	9300 K + 8 MPCD x = 0.283 ± 0.020 y = 0.298 ± 0.020	9300 K + 8 MPCD x = 0.283 ± 0.020 y = 0.298 ± 0.020

5.7.7 Misconvergence

Center area of display	(A) : 0.30 mm (Max.)
Corner area of display	(B) : 0.40 mm (Max.)



<Conditions>

Display image : Crosshatch pattern mixed with R, G and B colors.

Convergence gauge : KLEIN CM7AG or equivalent

Display area : W x H 380 x 285 mm

5.7.8 White Uniformity

xa - xc ≤ ± 0.015

xa:x coordinate at CRT center

xc:x coordinate at the any other point

ya - yc ≤ ± 0.015

ya:y coordinate at the CRT center

yc:y coordinate at the any other point

<Conditions>

Display :White flat field

Luminance :100 cd/m² at the center of display area

Display area 380 x 285 mm

5.7.9 Purity

Conspicuous mislanding shall not be visible within display area at a distance of 60cm from CRT surface.

<Conditions>

Display image : Red / Green / Blue flat field and White field

Luminance : Contrast max, Brightness Center point

Display area : 380 x 285 mm

5.7.10 Jitter

Invisible at a distance of 60 cm from CRT surface.

6. ENVIRONMENTS

6.1 Ambient temperature, humidity and altitude

	Operating	Storage and shipment
Temperature	0 ~ 40° C (32 ~ 104° F)	-20 ~ +60° C (-4 ~ 140° F)
Humidity	5 ~ 90 % *	5 ~ 90 % *
Altitude	3,000 m (Max.) (10,000 ft)	12,000 m (Max.) (40,000 ft)

* Non - condensation

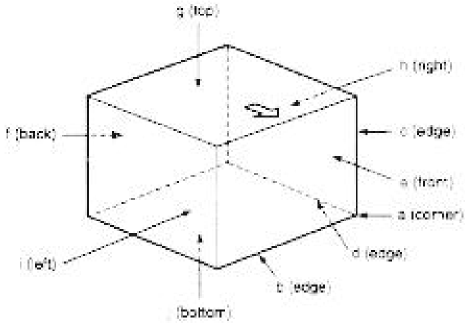
6.2 Vibration and shock

6.2.1 Vibration

	Order of tests	Direction of vibration		Acceleration		Frequency	Sweep	Test time
				Non-operation	Storage and shipment			
Unpacked	1	Vertical	Up to down	2.9 m/s² (0.3 G)		5 - 55 Hz	120 s	30 min.
	2	Horizontal	Front to back					15 min.
	3		Right to left					
Packed	1	Vertical	Up to down		12.3 m/s² (1.25 G)	5 - 50 Hz	810 s Logsweep	40 min.
	2	Horizontal	Front to back		7.4 m/s² (0.75 G)			20 min.
	3		Right to left					

6.2.2 Shock (Drop test)

Unpacked	20 G One time for each face (6 faces) (non-operation)			
Packed	Order of drop	Face to drop is to face the floor. (See the figure)	Height	Number of drop
	1	a, b, c, d, e, g, h, i	46 cm	1 time for each
	2	j	55 cm	



7. REGULATORY STANDARDS

7.1 Safety standards

Applicable standards

- UL 1950, Listing
- CSA 22.2 No. 950, Certification
- TüV (EN60950, IEC950) / GS (ZH1)
- NORDIC (SEMKO, NEMKO, DEMKO, FIMKO)

7.2 X-ray standards

Applicable standards

- DHHS, 21 CFR Subchapter J
- HC (HWC)
- PTB; Approval

7.3 EMC standards

Applicable standards

- VCCI class 2
- FCC part 15, subpart B, class B (up to 101 kHz)
- IC (DOC) class B (up to 101 kHz)
- CISPR 22 class B (EN55022)
- CE Marking

<EMI test pattern>

White, full "H" characters (9x14 dots), block (12x24 dots)

8. OTHERS

Applicable programs

- MPR II Radiation
- TCO '92 Radiation
- Energy Star
- ISO9241-3 (Ergonomics)

9. POWER CORD

•Northern Hemisphere Version (North America and Japan)	···	UL/CSA approved power cord (Wall Type)
•European Version	···	VDE approved power cord (PC Type)
•Australia, NewZealand Version	···	None

10. SIGNAL CABLE

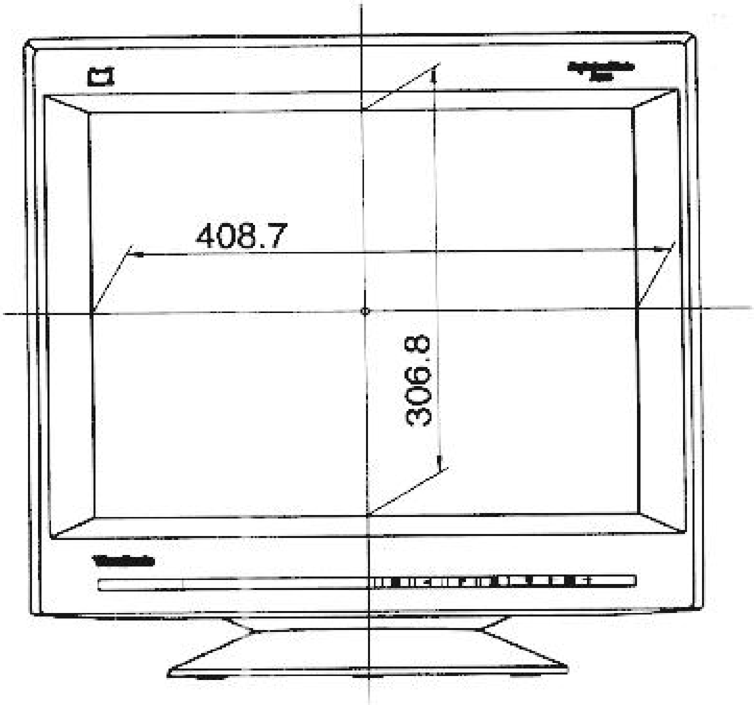
Signal cable with Mini D-Sub 15P connectors at both ends.

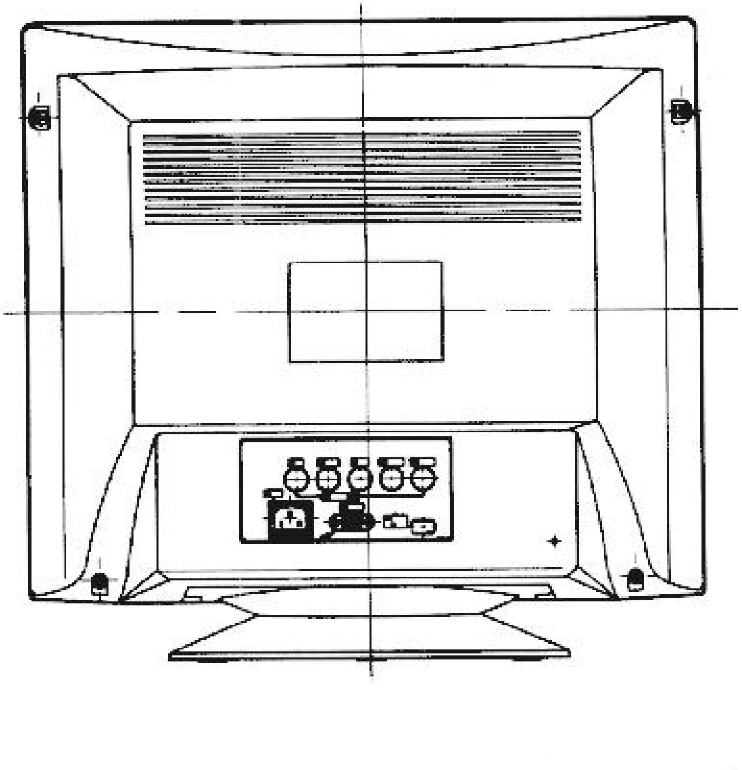
Length : 1.8 meter (5.91 feet)

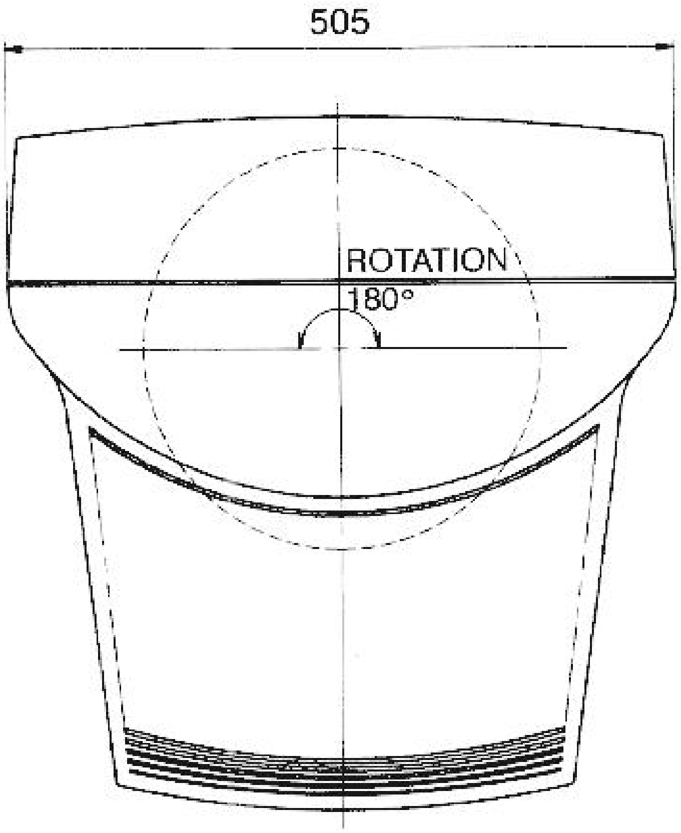
11. RELIABILITY

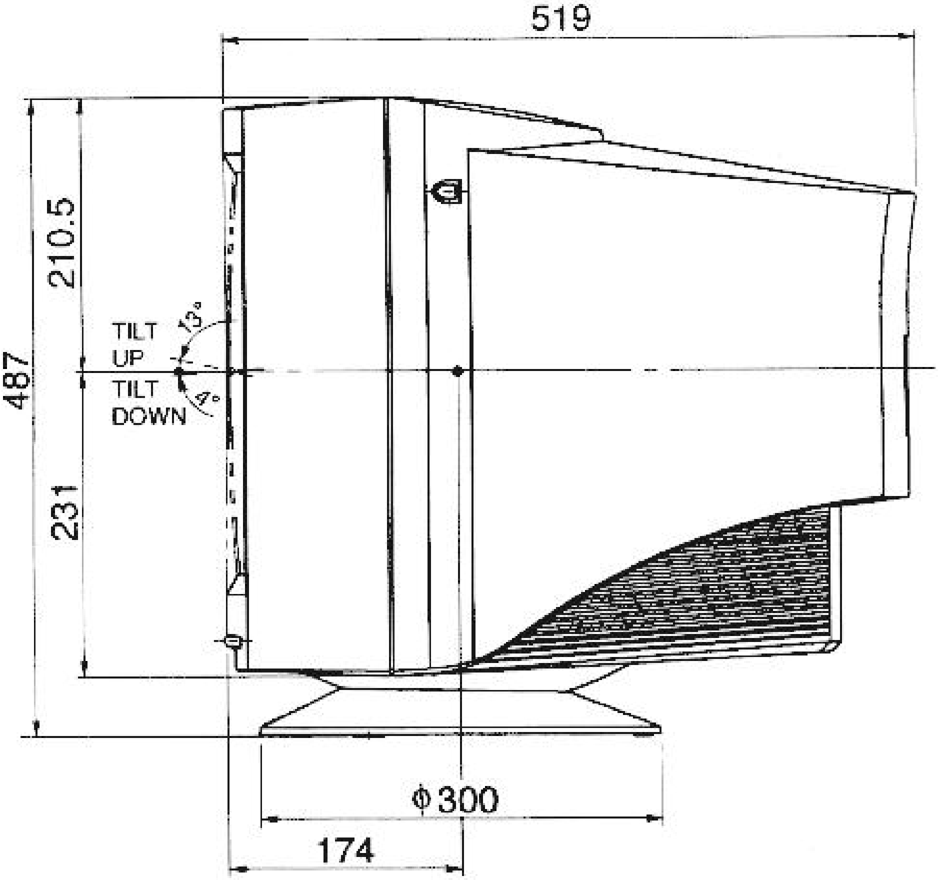
>55,000hrs (demonstrated MTBF)

DIMENSIONS






505
ROTATION
180°

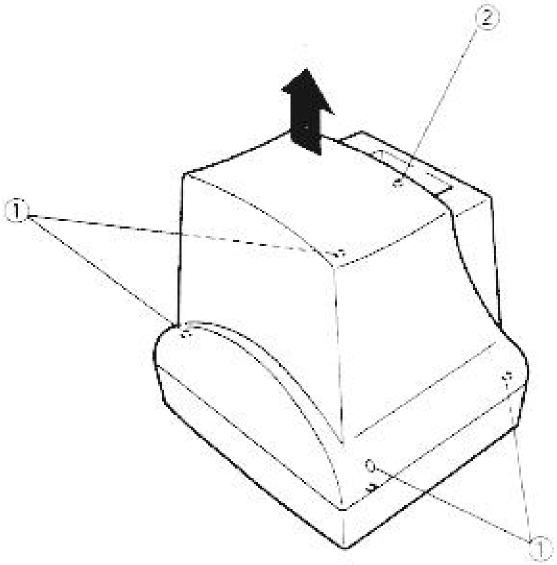

519
210.5
487
231
TILT
UP
TILT
DOWN
13°
4°
ϕ300
174

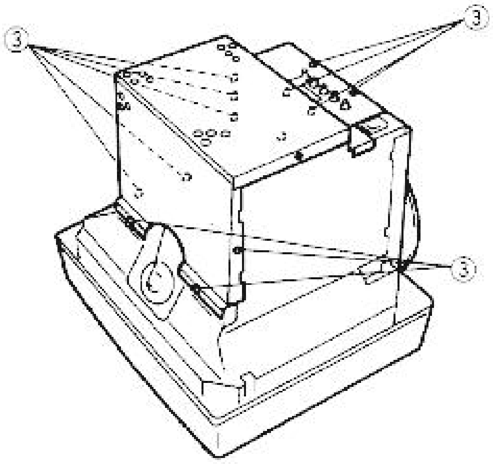
DISASSEMBLY INSTRUCTIONS

1. Rear cover removal

Note: Spread a mat underneath to avoid damaging the CRT surface.

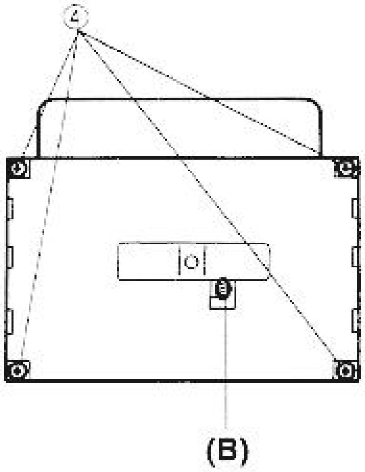
1) Remove four large screws ① and small screw ② from the rear cover.
2) Remove the cover.
3) Remove 13 screws ③ from the shield case.
4) Remove the shield case.

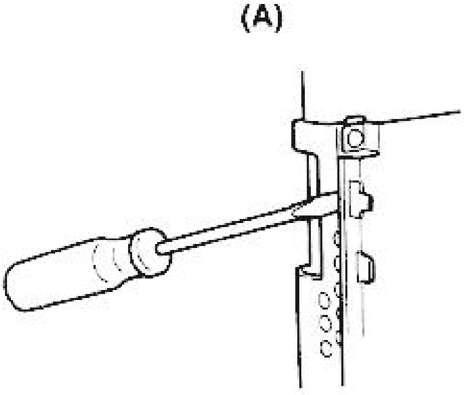




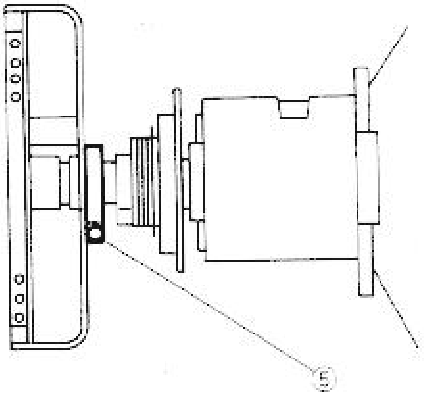
2. Video PCB removal

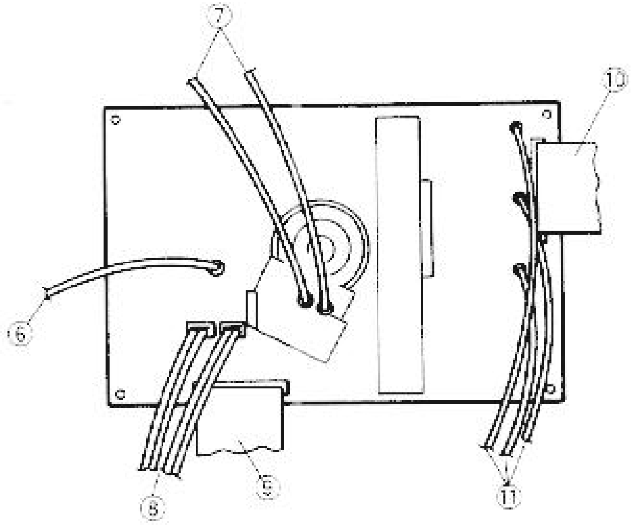
1) Remove four screws ④ securing the shield cover.
2) Desolder (B) and Remove the shield cover (A).

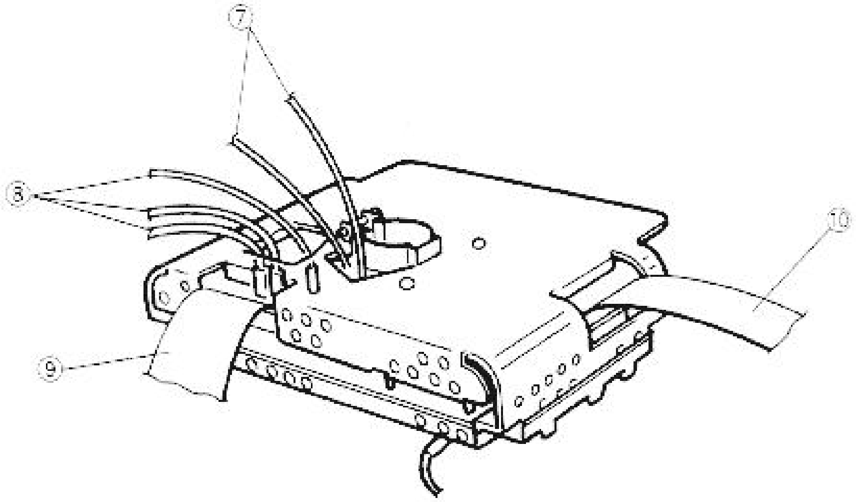




3) Loosen the screw ⑤ securing the CRT neck and the shield case.
4) Remove the PCB block from the CRT.
5) Remove the N651B connector ⑥.
6) Remove two focus leads ⑦.
7) Remove ground connector ⑧ (N106, N107A) connected to the PCB.
8) Remove N1010A connector ⑨.
9) Remove N1013A connector ⑩.
10) Remove RGB connector ⑪.
11) Remove the PCB from the shield case.

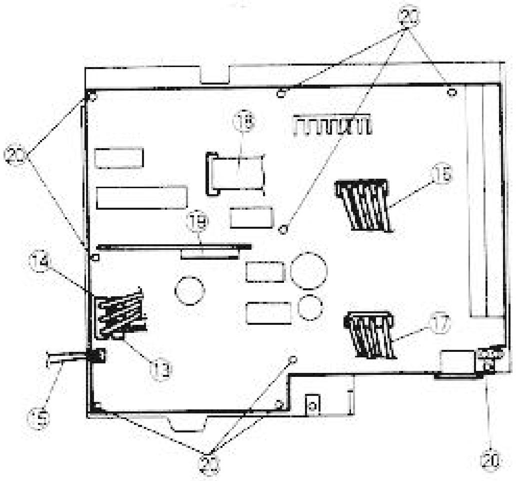






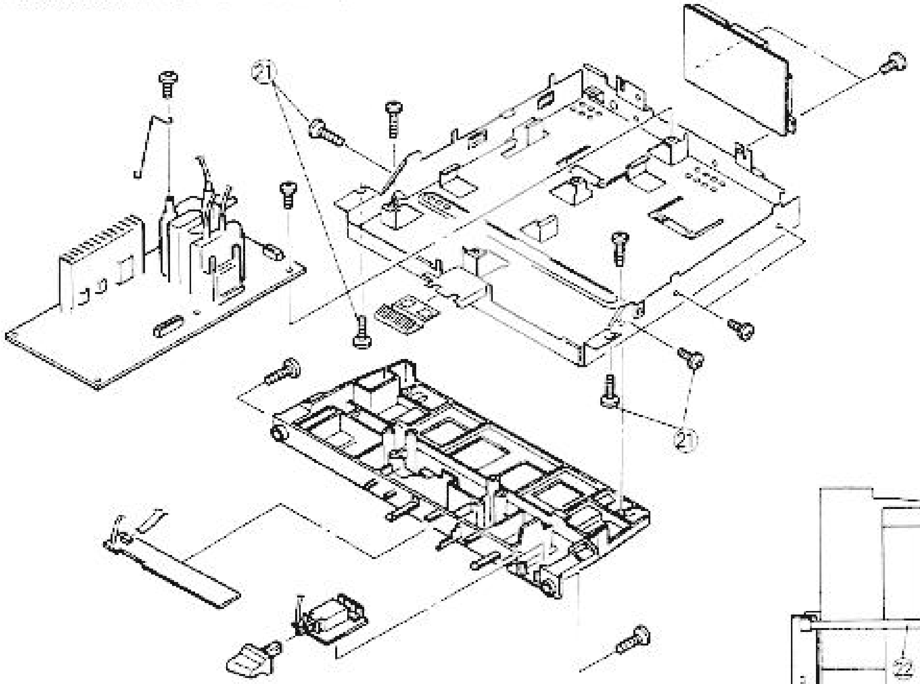
3. Main PCB Removal

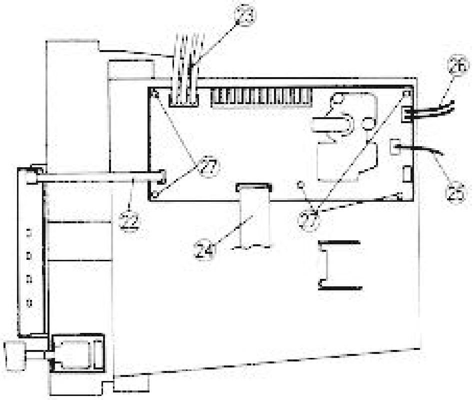
1) Remove the connector ⑫ located bottom right.
2) Lift and pull out for main PCB block.
3) Remove the connector ⑬ N901 and ⑭ N902 of the degauss coil.
4) Remove the connector ⑮ N991 of the tilt coil.
5) Remove the connector ⑯ N510 of th DY.
6) Remove the connector ⑰ N802A of the power switch.
7) Remove the connector ⑱ N601A of the EHT PCB.
8) Remove the connector ⑲ N1013A of the video PCB.
9) Remove the fitting metal and the PCB from bottom plate.
10) Remove nine screws ⑳.



4. EHT PCB Removal

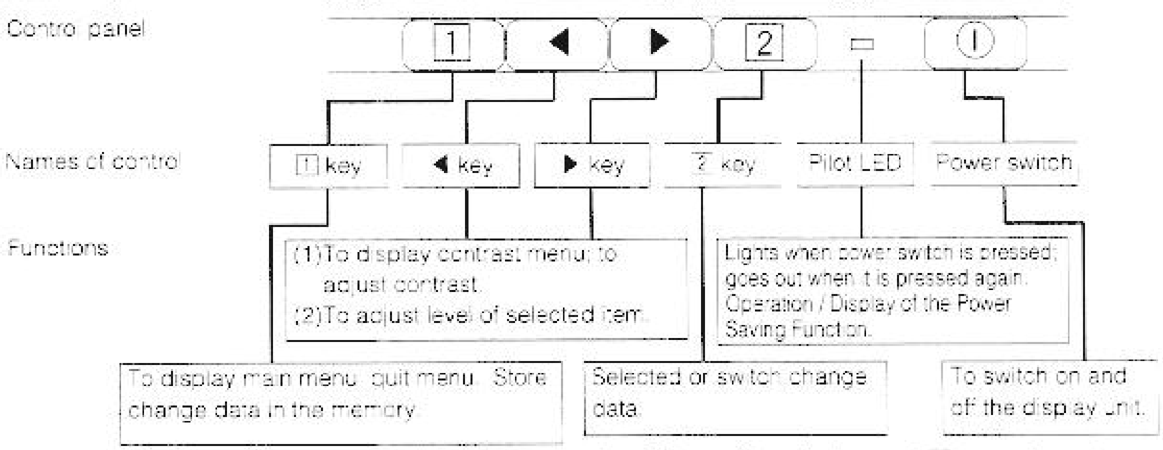
1) Remove 4 screws ㉒.
2) Remove the anode cap.
3) Remove the connector ㉒ N102B of the front switch.
4) Remove the connector ㉓ N12 of the radiator and pick up PCB.
5) Remove the connector ㉔ N601B of the main PCB.
6) Remove the connector ㉕ N651A of the video PCB.
7) Remove the connector ㉖ N1017B of the GND.
8) Remove 5 screws ㉗.
9) Remove EHT PCB from bottom plate.





CONTROL LOCATION

Basic operation of parts



Control panel

Names of control

Functions

1 key

◀ key

▶ key

2 key

Pilot LED

Power switch

(1)To display contrast menu; to adjust contrast.
(2)To adjust level of selected item.

Lights when power switch is pressed; goes out when it is pressed again. Operation / Display of the Power Saving Function.

To display main menu, quit menu. Store change data in the memory.

Selected or switch change data.

To switch on and off the display unit.

* For a detailed description of the functions of the 1 key, ◀ key, ▶ key, and 2 key, refer to the next section onward.

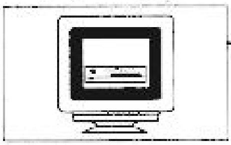
Examples of on-screen operation

A. Contrast adjustment

Display changes

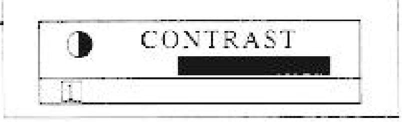
Steps of operation

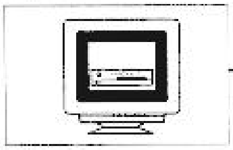
On-screen display changes



1. Display the contrast adjustment menu using the ◀ key or ▶ key.

< Contrast menu >





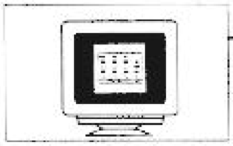
2. Set the desired state using the ◀ key or ▶ key. If the 1 key is pressed, the set data is stored in the memory and the menu screen is cleared.

B. H. size adjustment

Display changes

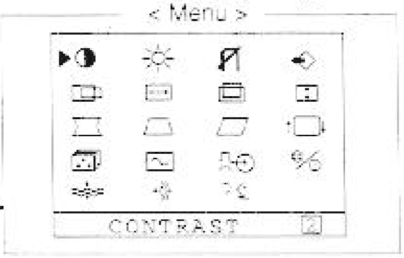
Steps of operation

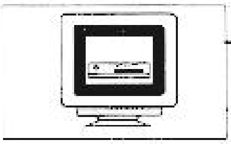
On-screen display changes



1. Call the main menu on the screen by pressing the 1 key.

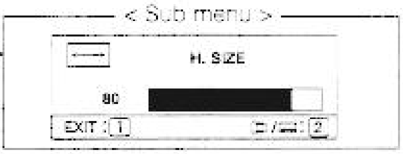
< Menu >

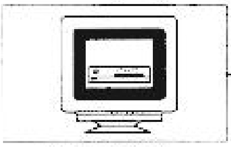




2. Move to cursor to H. SIZE using the ◀ key or ▶ key, then press the 2 key to select.

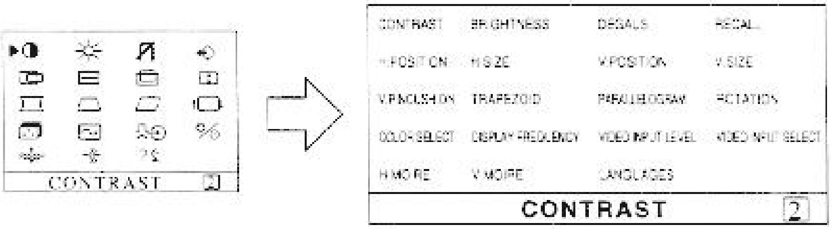
< Sub menu >





Main menu

3. Set the desired state using the ◀ key or ▶ key. If the 1(EXIT) key is pressed, the set data is stored in the memory and the menu screen is cleared.



CONTRAST	BRIGHTNESS	DEGAUS	RECALL
H.POSITION	H.SIZE	V.POSITION	V.SIZE
V.PINCUSHION	TRAPEZOID	PARALLELOGRAM	ROTATION
COLOR SELECT	DISPLAY FREQUENCY	VIDEO INPUT LEVEL	VIDEO INPUT SELECT
H.MOIRE	V.MOIRE	LANGUAGES	

CONTRAST 2

CAUTION FOR ADJUSTMENT AND REPAIR

1. Degaussing is inevitably required at purity adjustment or convergence adjustment.
2. If you check or adjust electrical specification or function, more than 20 minutes burn-in is required.
3. Reforming of the lead wire is required after your repair work.
4. Prior to starting work, be sure to check that the input signal is at the specified timing and that the polarity is as specified in all modes.
5. Brightness control: After mounting the rear cover, brightness tends to decrease about 5 cd/m^2 on a flat white field and about 1 cm/m^2 on a white raster field. This should be taken into consideration.
6. Brightness stabilizing time: It takes about 20 to 50 seconds for the brightness to stabilize after turning the power off for 5 seconds (AC). Therefore, care should be taken to this.
7. Aging should be made in white raster of 30 – 50 cd/m^2 and raster size, 402 x 301 mm before adjusting the ITC.
8. Set the CONTRAST to MAX and BRIGHTNESS to CENTER using the O.S.D.

CAUTION FOR SERVICING

When servicing or replacing the CRT, high voltage sometimes remains on the anode. So, completely discharge high voltage before servicing or replacing the CRT so as to prevent a shock to the service person.

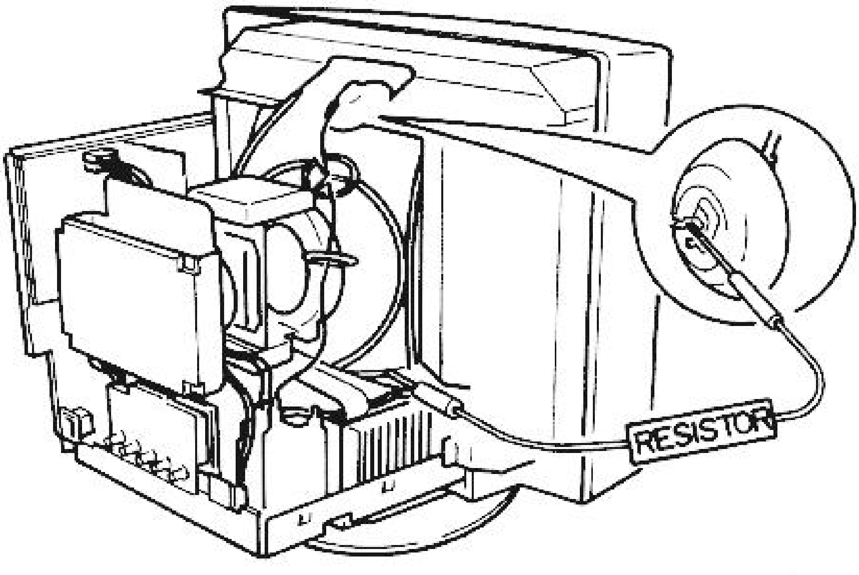
CRT Anode Discharge

1. When you check the CRT anode or replace the CRT, discharge the CRT anode to the external conductive coating (aquadag) of CRT, especially when checked right after power turn-off.
2. Ground one end of a jumper wire which has a resistor (30 kV < resisting pressure 100 MΩ) and connect the other point to the CRT anode.

Note: Grounding must be done first.

This model has a section that does not share a common ground with the power supply section. The different sections are referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may be hit by an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscilloscopes or multimeters.
4. Always unplug the unit before beginning any operation such as removing the chassis.



ADJUSTMENT AND CHECK PROCEDURE

INTRODUCTION

- This monitor is controlled by a microcomputer. With the exception of purity/convergence/focus all is digitally adjusted.
  Therefore a computer, the dedicated control software, the dedicated interface, a 9~12 V power supply, and a signal generator are required servicing.

TOOLS REQUIRED

- **Computer**
  The control software is IBM PC compatible only. Therefore, it is not compatible with any other operating systems. For further information please contact our sales office.

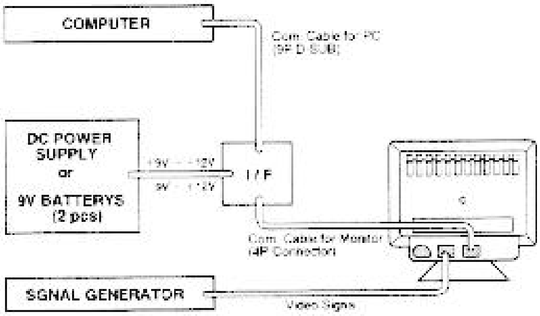
- **Control Software**
  The GV3 chassis can only use adjustment program disk for this model. No other program can access the EEPROM on the monitor. For further information please contact our sales office.

- **Interface**
  The interface is dedicated to work only with the control software and the HV and GV chassis. There are no substitutes for this interface. For further information, please contact our sales office.

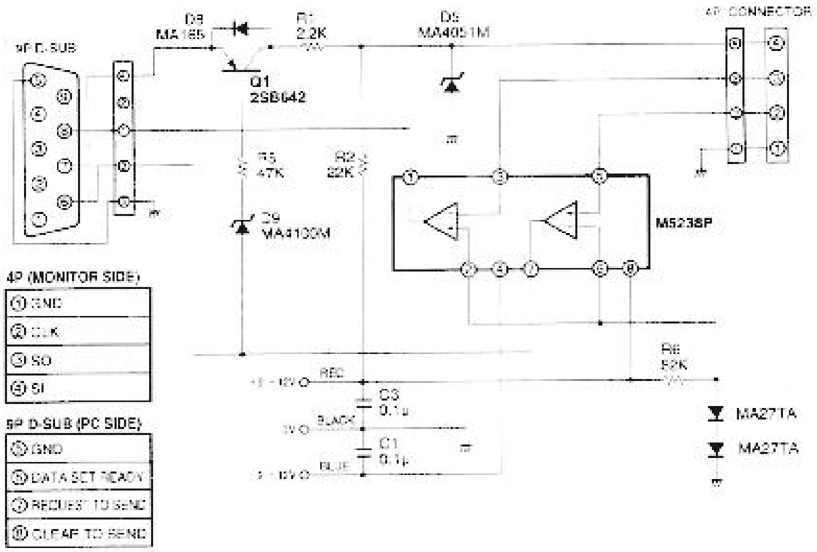
- **Power Supply**
  A DC 9~12 V (+9~12 V/-9~12 V) power supply is required for operating the interface.

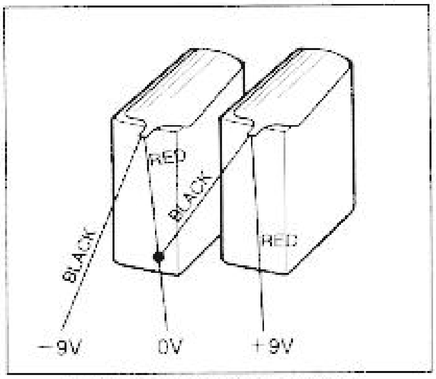
- **Signal Generator**
  It is necessary for you to use a signal generator which operates on fH 115 kHz, fv 160 Hz, and fc 250 MHz bands.

INTERFACE CONNECTION


COMPUTER
Com. Cable for PC
(9P D SUB)
DC POWER SUPPLY or 9V BATTERYS (2 pcs)
+9V ~ +12V
-9V ~ -12V
I / F
Com. Cable for Monitor
(4P Connector)
SIGNAL GENERATOR
Video Signal

INTERFACE SCHEMATIC DIAGRAM


9P D-SUB
D8
MA165
R1
2.2K
D5
MA4051M
4P CONNECTOR
Q1
2SB642
R5
47K
R2
22K
D9
MA4100M
M5238P
R6
82K
+9 ~ 12V
RED
C3
0.1μ
0V
BLACK
C1
0.1μ
-9 ~ -12V
BLUE
MA27TA
MA27TA
4P (MONITOR SIDE)
① GND
② CLK
③ SO
④ SI
9P D-SUB (PC SIDE)
⑤ GND
⑥ DATA SET READY
⑦ REQUEST TO SEND
⑧ CLEAR TO SEND


RED
BLACK
BLACK
RED
-9V
0V
+9V

BATTERY CONNECTION

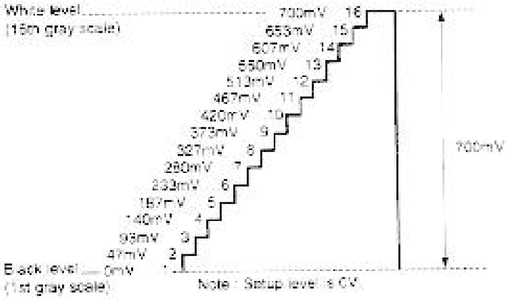
OTHER TOOLS

- Oscilloscope (dual trace)
- Scope probe – Attenuation: 100:1
  Attenuation: 10:1
- Digital Voltmeter – Range: 0 to 1000 V DC
  Accuracy: 0.1 %
- TV color Analyzer II – that reads luminance and chromaticity X and Y coordinates.
- Digital High Voltmeter
- AC power supply – Output voltage : 0 to 300 V
- Degaussing coil
- Convergence meter
- Scale
- Double-faced scale
- Microscope – Scale factor: 50
- White racquer (Paint)

STANDARD CONDITION OF ADJUSTMENT PROCEDURE

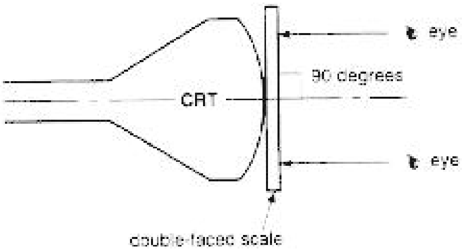
- Signal timing : Standard timing 1600 x 1200 (See page 5)
- Display pattern : White, full "H" character
- Signal level : V/H: TTL level video: 700 mV
- Input source : AC 120 V, 60 Hz
- Ambient temperature : Room temperature
- Warm-up time : More than 30 minutes
- Brightness control : Center
- Contrast control : Max.
- Magnetic field : Vertical: 40 µT
  Horizontal: 0 µT
- Signal cable : Attached

Video input signal from PC.



Note : Setup level is 0V

- Use a Helmholtz device to adjust an unit with no horizontal magnetic field and a vertical field of 40 µT. Inspect the unit under the same conditions.
- The ambient illuminance must be 200 lux.
- Use an external degaussing coil any time the DEGAUSS switch does not remove color shading.
- To check the image width, height, linearity and distortion, proceed as below.



Measure level with respect to tube axis.

ADJUSTMENT SOFTWARE

1. Software operating procedure

A) Remove the rear cover of the monitor.

B) Power on the computer and monitor.

C) Connect the Communication cable for monitor adjustment.

D) Insert the adjustment disk into the drive.

E) At the A:> on the DOS prompt type "VSR", then press [ENTER].

F) Refer to the adjustment procedures.

2. Adjustment Program

Main Menu of Adjustment Program

```
<<TX-D2171 ADJUST PROGRAM MAIN MENU>>   (e: exit)          <Ver 6.0>
 1)  Initial CHECK                   6)  Information
 2)  OSC DATA SET                    7)  Preset Editor
 3)  VSR                             8)  ADJ VIDEO 1.0Vpp
 4)  VIDEO                           9)  COLOR ADJUST
 5)  EEPROM                         10)  DAF ADJUST
```

Description of Function of Each Menu

1) Initial check

- The communication port is changed over from DDC use to servicing use.
  Normally, this port is set for DDC use. When this item is selected, switched to the service use by transmitted for switching command. When this transmission is successful, the computer screen is cleared and a message of 'HIT RETURN KEY >' is displayed.
- When the RETURN key is pressed at this stage, chassis discrimination is carried out. If there is OK, the main menu is recovered and various controls from computer become possible. If the connected monitor is other than GV3 chassis, a message of "This is not GV3 chassis' is displayed and execution is stoped.
- If this menu is selected and a communication error occurs, examine communication cable connections and check the power supply for the communication cable and monitors.
- This port is set for DDC use after the monitor's power switch has been turned on. Therefore, transmission of this command is needed prior to adjustments.

2) OSC data set

This is a menu intended to set up automatic VCO adjusting data in the PLL for horizontal and vertical oscillation, incorporated in the SSP (Super Signal Processor). When this item is selected, a command for data setting is transmitted to the monitor. It takes about 5 seconds to set up data. During this period, monitor screen is cleared. Upon completion of setting, a message of "HIT RETURN KEY >" is displayed in the computer screen.

3) VSR (Variable Scan Rate)

To achieve stabilized operation and high performance throughout the working frequency range, the frequency band is split into 4 positions. In each position, adjustments for major items are performed and the result is saved in the EEPROM as interpolation data. In this model, the following frequencies are specified for VSR adjustments. With frequencies other than those specified below, adjustment is disabled.

Signal name	Adjust mode	Horizontal frequency	Vertical frequency
GV3-1	INTP0	29.5kHz	48.0Hz
GV3-2	INTP1	54.0kHz	77.0Hz
GV3-3	INTP2	82.5kHz	126.0Hz
GV3-5	INTP3	115.5kHz	165.0Hz

4) Video

This is a menu for CRT cut-off and brightness adjustments. Focus adjustment is also effected in this menu.

5) EEPROM

This is a menu used to control EEPROM data in the monitor. Data transfer from monitor to PC, or from PC to monitor, is also possible.

6) Information

This is not a screen for adjustments, but a menu used to display monitor's operating conditions, such as horizontal and vertical frequencies memory address, etc.

7) Preset editor

This is an adjustment screen of the factory preset mode. The result of adjustments is registered in the address of EEPROM to be exclusively used for factory preset.

8) ADJ video 1.0Vpp

This is a menu intended to adjust the brightness when the video input level is set at "1.0Vpp" in the OSD. This adjustment requires a video signal of 1.0Vpp.

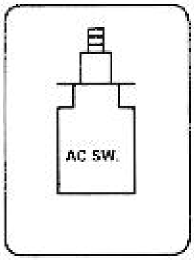
9) Color adjust

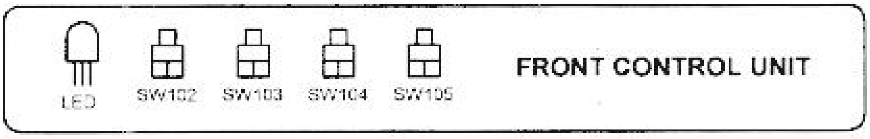
This monitor enables three types of color temperature setting. In this case, adjustment of 9300k only is performed with Menu (4) and then automatic setting of the two remaining 6500k and user color is made with this menu based on the setting data.

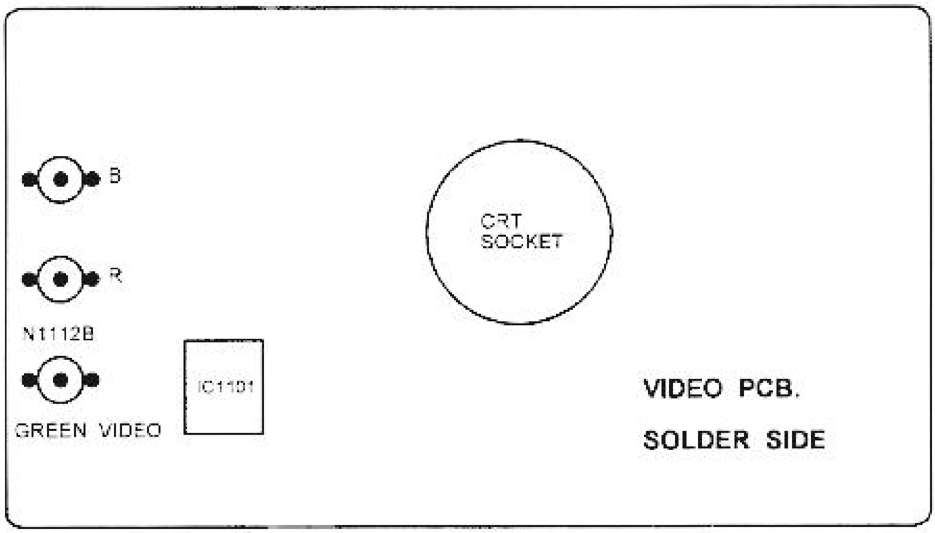
10) DAF adjust

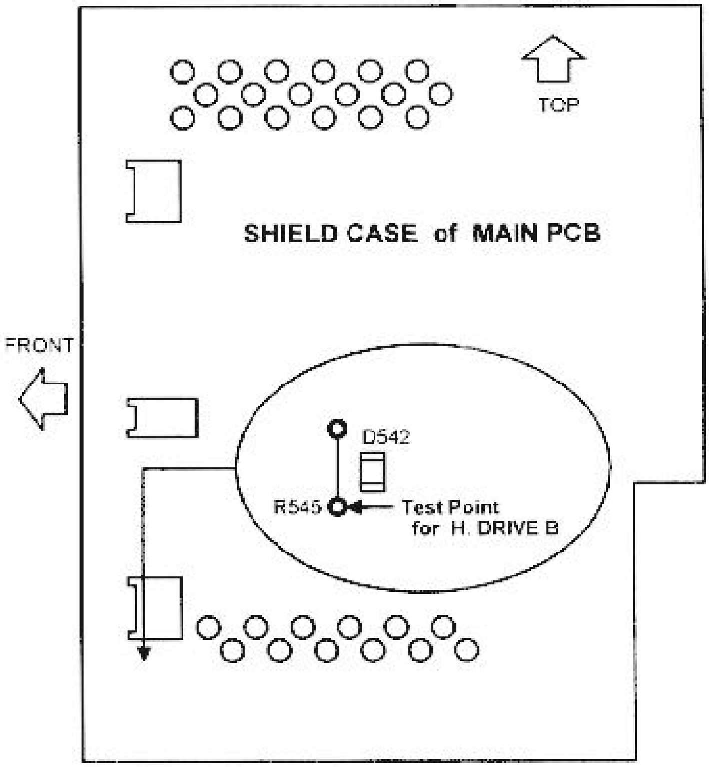
This is a menu used for the adjustment of parabolic wave forms for dynamic focusing.

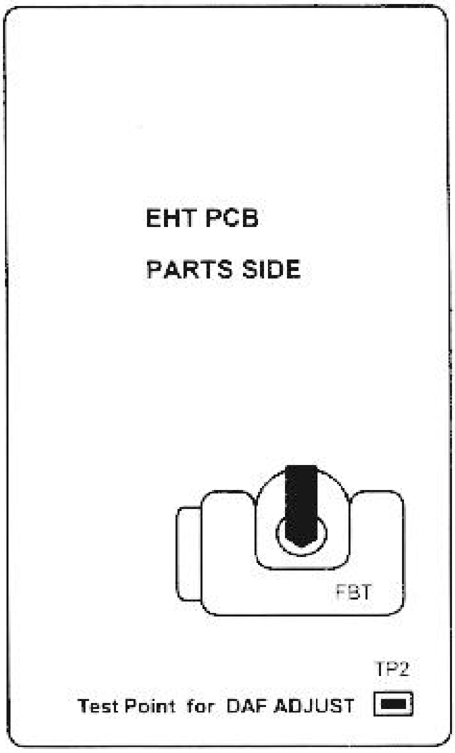
SERVICE ADJUSTMENT CONTROL LOCATION




LED
SW102
SW103
SW104
SW105
FRONT CONTROL UNIT


B
R
N1112B
GREEN VIDEO
IC1101
CRT SOCKET
VIDEO PCB.
SOLDER SIDE


TOP
SHIELD CASE of MAIN PCB
FRONT
D542
R545
Test Point for H. DRIVE B


EHT PCB
PARTS SIDE
FBT
TP2
Test Point for DAF ADJUST

REQUIRED ADJUSTMENT PROCEDURE AFTER A PARTS IS REPLACED (✓ IS REQUIRED)

ADJUSTMENT ITEM		REPLACED PARTS															
		MAIN P.C.B	VIDEO P.C.B	SSP P.C.B.	EHT P.C.B.	CRT DY	IC1001 IC1101 IC1201 Q1021 Q1022 Q1023 Q1121 Q1122 Q1123 Q1221 Q1222 Q1223 IC1341 IC1342 IC351 Q1071 Q1075 Q1076 Q1171 Q1175 Q1176 Q1271 Q1275 Q1276	IC540	IC850 Q873 Q550 Q540 T542	Q604 Q673	T601	IC581	IC302	IC430			
A	DATA SETTING ✱	✓		✓													
B	H. DRIVE +B	✓		✓				✓									
C	OSC DATA SET	✓		✓													
E	H. CENTER	✓		✓		✓						✓					
F	VSR SETTING	✓		✓	✓	✓			✓	✓	✓			✓			
G	FACTORY PRESET	✓		✓	✓	✓			✓	✓	✓			✓			
H	DAF ADJUST	✓		✓	✓	✓							✓				
I	FOCUS ADJUST	✓		✓	✓	✓					✓		✓				
J	CUT-OFF & BRIGHTNESS	✓	✓	✓	✓	✓	✓			✓	✓						
K	COLOR DATA SETTING	✓	✓	✓	✓	✓				✓	✓						
L	VIDEO 1.0V ADJUST	✓	✓	✓	✓	✓	✓			✓	✓						
M	DATA SAVING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	PURITY & CONVERGENCE					✓											
	SCREEN CHECK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

✱ DATA SETTING : Do not load standard data except when Main PCB and SSP Card are replaced.

ADJUSTMENT PROCEDURE

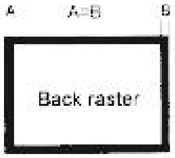
Note 1 : Check to be sure that the program disk name is **P815** before making necessary adjustment.

Note 2 : Unless otherwise specified, the monitor state is as given at right.

Note 3 : The underlined places indicate the adjustment items on the screen of the PC.

1. Description of Adjustment Method

	Program Menu Item	● Test Meter ↓ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
A	**STANDARD DATA SETTING**		A1	Mode-1	Turn ON the power switch of the monitor.	
			A2		Set the cell to 1) Initial Check at the main menu and press [↵], then press [↵] to return to main menu.	
			A3		Set the cell to 4) EEPROM at the main menu and press [↵].	
	1) Load data from FILE		A4		Set the cell to the menu at left and press [↵].	
			A5		A massage **FILE -> EEPROM FILE NAME (q or Q escape) [ ] :** is displayed. So key in the DACDATA.DAT (when using the standard data) and press [↵]	
			A6		Turn OFF the power switch of the monitor, then turn ON. (To make reset)	
			AE		Set the cell to 1) Initial Check at the main menu and press [↵], then press [↵] to return to main menu.	
	Do not load standard data except when Main P.C.B. and SSP Card are replaced.					
B	**H. DRIVE +B** 3) VSR	● Digital voltmeter ↓ R545 - GND Refer to page 22 for the test point. ☐ Crosshatch	B1		Set the cell to the menu at left and press [↵].	
			B2		Set the cell to the adjusting mode INTP [0] and press [↵].	
			B3	GV3-1	Check that the input signal to the monitor is [fH 29.5kHz] and [fV 48.0Hz] and press [↵]	
			B4		Set the cell to H DRIVE B and press [↵].	
			B5		Make the adjustment to the value shown at right by using [←] and [→].	24.0V ±0.3V
			B6		Register by press [↵] and [E] to return to menu of **B2**.	
			B7	GV3-2	Input signal [fH 54.0kHz] and [fV 77.0Hz]	23.0V ±0.3V
			B8		Select Adjusting mode INTP [1] and repeat above (**B4~B6**) procedure.	
			B9	GV3-3	Input signal [fH 82.5kHz] and [fV 126.0Hz]	22.0V ±0.3V
			B10		Select Adjusting mode INTP [2], and repeat above procedure.	
			B11	GV3-5	Input signal [fH 115.5kHz] and [fV 165.0Hz]	19.0V ±0.3V
			B12		Select Adjusting mode INTP [3], and repeat above procedure.	
			BE		Press [E] to return to main menu.	

Program Menu Item		◆ Test Meter ↓ Test Point □ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
C	**OSC DATA SET** 2) OSC DATA SET	□ Crosshatch	C1	Mode-1	Check that the input signal to the monitor is [fH 93.8kHz] and [fV 75.0Hz].	
			C2		Set the cell to the menu at left and press [↵].	
			CE		The screen image is cleared, then press [↵] to return to main menu.	
D	**FOCUS PRE ADJUST** 4) VIDEO	□ G. Crosshatch	D1	Mode-1	Check that the input signal to the monitor is [fH 93.8kHz] and [fV 75.0Hz].	
			D2		Set the cell to the menu at left and press [↵].	
			D3		Set the cell to G51 and press [↵].	
			D4		Make the adjustment by using [←], [→] to screen optimum for the **Corner Vertical** line.	
			D5		Register by pressing [↵].	
			D6		Set the cell to G52 and press [↵].	
			D7		Make the adjustment by using [←], [→] to screen optimum for the **Center Horizontal** line.	
			DE		Register by pressing [↵], then press [E] to return to main menu.	
E	**H. CENTER** 3) VSR	□ RGB off (Sync only)	E1		Set the Brightness to MAX by using the OSD.	 Set the raster to the center with respect to the bezel.
			E2		Set the cell to the menu at left and press [↵].	
			E3		Set the cell to the adjusting mode INTP [0] and press [↵].	
			E4	GV3-1	Check that the input signal to the monitor is [fH 29.5kHz] and [fV 48.0Hz] and press [↵].	
			E5		Set the cell to H CENTER and press [↵].	
			E6		Make the adjustment to the value shown at right by using [←] and [→].	
			E7		Register by pressing [↵] and [E] to return to menu of **E3**.	
			E8	GV3-2	Input signal [fH 54.0kHz] and [fV 77.0Hz]	
			E9		Select Adjusting mode INTP [1], and repeat above (**E5~E7**) procedure.	
			E10	GV3-3	Input signal [fH 82.5kHz] and [fV 126.0Hz]	
			E11		Select Adjusting mode INTP [2], and repeat above procedure.	
			E12	GV3-5	Input signal [fH 115.5kHz] and [fV 165.0Hz]	
			E13		Select Adjusting mode INTP [3], and repeat above procedure.	
			FE		Press [E] to return to main menu.	

Program Menu Item		◆ Test Meter ⌡ Test Point □ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
F	**VSR SETTING** 3) VSR		F1		Set the cell to the menu at left and press [↵].	
			F2		Set the cell to the adjusting mode INTP [0] and press [↵].	
		□ Crosshatch	F3	GV3-1	Check that the input signal to the monitor is [fH 29.5kHz] and [fV 48.0Hz] and press [↵].	H : 380mm ±5 V : 285mm ±5
			F4		Set the cell to following items, press [↵] and make the adjustment to the value shown at right by using [←] and [→]. ① H. SIZE ④ V. POSITION ② H. POSITION ⑤ V. PCC ③ V. SIZE(VSR) ③ V. LIN(S)	H/V Posi : Center V. PCC : V. LIN : Best point
			F5		Register by pressing [↵] at each item, and press [E] to return to menu of **F2**.	
			F6	GV3-2	Input signal [fH 54.0kHz] and [fV 77.0Hz]	
			F7		Select Adjusting mode INTP [1], and repeat above (**F4~F5**) procedure.	
			F8	GV3-3	Input signal [fH 82.5kHz] and [fV 126.0Hz]	
			F9		Select Adjusting mode INTP [2], and repeat above procedure.	
			F10	GV3-5	Input signal [fH 115.5kHz] and [fV 165.0Hz]	
			F11		Select Adjusting mode INTP [3], and repeat above procedure.	
			FE		Press [E], to return to the main menu.	
G	**FACTORY PRESET** 5) Preset Editor	□ Crosshatch	G1		Set the cell to the menu at left and press [↵].	
			G2	Mode-1	Check that the input signal to the monitor is [fH 93.8kHz] and [fV 75.0Hz] and press [↵]	
			G3		Set the cell to following items, press [↵] and make the adjustment to the value shown at right by using [←] and [→]. ① H. SIZE ⑥ V. PCC BARANCE ② H. POSITION ⑦ PARALLELOGRAM ③ V. SIZE ⑧ TRAPEZOID ④ V. POSITION ⑨ V. LIN (C) ⑤ V. PCC	H : 380mm ±5 V : 285mm ±5 H/V Posi : Center V. LIN(C): Best point
			G4		Register by pressing [↵] at each item, and press [E] to return to the sub menu, then press [Y] go to **G5**.	
			G5	Mode-2	Check that the input signal to the monitor is [fH 31.5kHz] and [fV 60.0Hz] and press [↵].	
			G6		Set the cell to following items, press [↵] and make the adjustment to the value shown at right by using [←] and [→]. ① H. SIZE ③ V. SIZE ② H. POSITION ④ V. POSITION **- To be continued -**	H : 380mm ±7 V : 285mm ±7

	Program Menu Item	♦ Test Meter ⇩ Test Point □ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
G	**FACTORY PRESET** 5) Preset Editor	□ Crosshatch	G7	Mode-3	Input signal [fH 37.5kHz] and [fV 75.0Hz] and repeat above (**G2 - G4**) procedure.	H : 380mm ±7 V : 285mm ±7
			G8	Mode-4	Input signal [fH 60.0kHz] and [fV 75.0Hz] and repeat above procedure.	H : 380mm ±7 V : 285mm ±7
			G9	Mode-5	Input signal [fH 68.7kHz] and [fV 75.0Hz] and repeat above procedure.	H : 380mm ±7 V : 285mm ±7
			G10	Mode-6	Input signal [fH 80.0kHz] and [fV 75.0Hz] and repeat above procedure.	H : 355mm ±7 V : 284mm ±7
			G11	Mode-7	Input signal [fH 91.1kHz] and [fV 85.0Hz] and repeat above procedure.	H : 355mm ±7 V : 284mm ±7
			G12	Mode-8	Input signal [fH 106.3kHz] and [fV 85.0Hz] and repeat above procedure.	H : 380mm ±7 V : 285mm ±7
			GE		Press [E] to return to the sub menu, then press [N] to return to the main menu.	
H	**DAF ADJUST**	□ White flat field	H1		Set the cell to the menu at left and press [↵].	
	10) DAF ADJUST	● Oscilloscope ⇩ TP2~GND	H2	GV3-5	Check that the input signal to the monitor is [fH 93.8kHz] and [fV 75.0Hz].	
	Oscilloscope Range	100:1 probe	H3		Select the H DAF PHASE and press [↵].	
	2µs/div.(for Horizontal)	⇩ N1112B ~ GND 10:1 probe	H4		Adjust as shown at below by using [←] and [→], and press [↵] for registration. (Refer to **Fig. H4** for adjustment)	
			H5		Select the H DAF GAIN and press [↵].	
			H6		Adjust as shown at right by using [←] and [→], and press [↵] for registration. (Refer to **Fig. H6** on next page for adjustment)	C-D=410V
	2ms/div (for Vertical)		H7		Select the V DAF GAIN and press [↵].	
			H8		Adjust as shown at right by using [←] and [→], and press [↵] for registration. (Refer to **Fig. H8** on next page for adjustment)	E-F=190V
			HE		Press [E] to return to main menu.	

Fig. H4

Set position to A=B

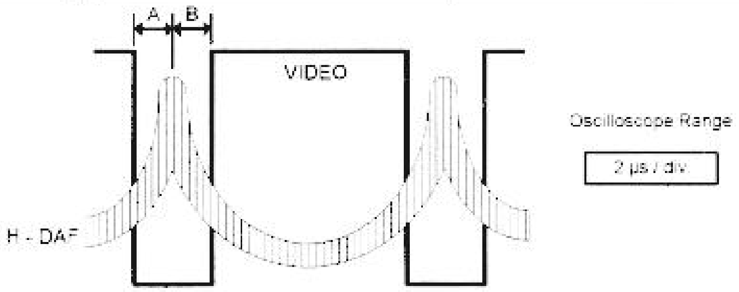
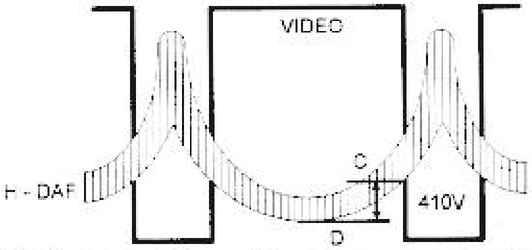


Fig. H6

Set voltage to C-D=410V

C : Closing VIDEO and H. DAF
D : Bottom of H. DAF



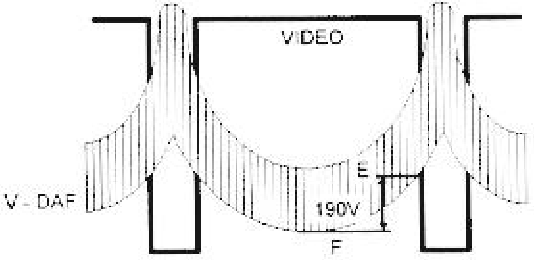
Oscilloscope Range

2 µs / div

Fig. H8

Set voltage to E-F=170V

E : Closing VIDEO and V. DAF
F : Bottom of V. DAF



Oscilloscope Range

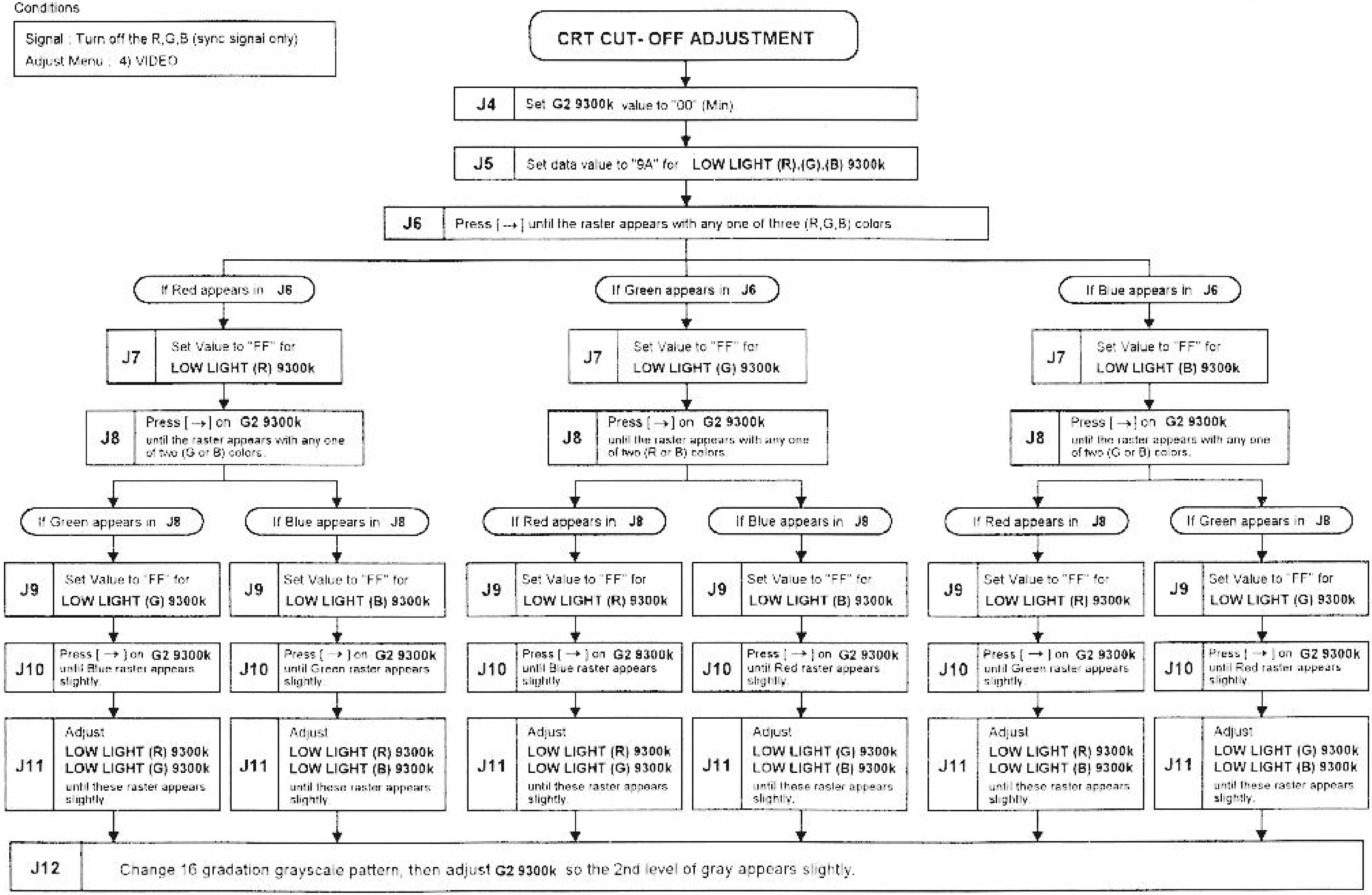
2 ms / div

	Program Menu Item	◆ Test Meter ⇓ Test Point ☐ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
I	**FOCUS FINAL ADJUST** 4) VIDEO	☐ G. Crosshatch		Mode-1	The same as item D for adjustment manner. Repeat **D1~DE** adjustment .	
J	**CRT CUT-OFF**	◆ TV Color Analyzer II	J1		Set the Contrast to MAX, Brightness to Center and Color is 9300k by using the OSD.	
		☐ RGB Off (Sync only)	J2	Mode-1	Check that the input signal to the monitor is [fH 93.8kHz], [fV 75.0Hz] and turn off the RGB signal.	
	4) VIDEO		J3		Set the cell to the menu at left and press [↵].	
			J4 ↓ **J12**		Make the adjustment R,G and B Low Light 9300k and G2 9300K by using [←] , [→] to CRT cut-off. **Please refer to flow chart for CRT cut-off adjustment on page 31.**	
	BRIGHTNESS & COLOR ADJUST	☐ White window (5cm×5cm at the center)	J13		Change to the pattern at left.	
			J14		Move the cell to the following items and make the adjustment to the value shown at right by using [←] and [→], then [↵] for registration. SUB CONT (R) 9300K SUB CONT (G) 9300K SUB CONT (B) 9300K	Y=105 cd/m² x=0.283 ±0.015 y=0.298 ±0.015
			J15		Set CONTRAST to MIN by using the OSD.	
			J16		Move the cell to the following items and make the adjustment to the value shown at right by using [←] and [→], then [↵] for registration. LOW LIGHT (R) 9300k LOW LIGHT (G) 9300k LOW LIGHT (B) 9300k **Adjust two colors only out of above (RGB) three as shown in J11 on page 31.** **- To be continued -**	x=0.283 ±0.015 y=0.298 ±0.015

Program Menu Item		◆ Test Meter ⇩ Test Point □ Pattern	JOB CODE	Input Signal	Operation	Adjusting Value
	BRIGHTNESS & COLOR ADJUST	□ White window (5cm×5cm at the center)	J17 J18	Mode-1	Set CONTRAST to MAX by using the OSD Check the value shown at right, then If out of range, to repeat **J13~J19**.	Y=105 cd/m^2 x=0.283 ±0.015 y=0.298 ±0.015
J	**ABL** 4) VIDEO	□ White flat field (full window)	J19 J20 J21 JE		Set CONTRAST to MAX by using the OSD Change to the pattern at left. Move the cell to ABL 9300k and make the adjustment to the value shown at right by using [←] and [→], then [↵] for registration. Press [E] to return to main menu.	Y=97 cd/m^2
K	**DATA SETTING** 9) COLOR ADJUST		K1 K2 KE		Set the cell to the menu at left and press [↵]. Press [Y] and [↵] for following messages. **Calculate COLOR 6550K data automatically . OK ? >** **Calculate USER COLOR data automatically . OK ? >** **Calculate ABL data automatically . OK ? >** **finished . (Hit return key)** Press [↵] to return to main menu.	
L	**1.0V ADJUST** 8) ADJ VIDEO 1.0Vp-p	◆ TV Color Analyzer II □ White window (5cm×5cm at center) 1.0V p-p video	L1 L2 L3 L4 L5 LE	Mode-1	Set Input Video Level 1.0V using the OSD of the monitor. Set the cell to the menu at left and press [↵]. Change to the pattern and signal level at left. This messages will appear : **Please set video level at 1.0Vpp. then hit return key.** Check input signal, then press [↵]. **Please adjust CONTRAST (1.0Vpp) using cursor key.** Make the adjustment to the value shown at right by using [←] and [→]. Press [↵] for registration and return to the main menu.	Y=105 cd/m^2
M	**DATA SAVING** 2) Save data to FILE		M1 M2		Set the cell to 4) EEPROM at the main menu and press [↵]. Set the cell to the menu at left and press [↵] A massage **EEPROM --> FILE NAME (q or Q escape) [ ] :** Use serial number as a file name (EXAMPLE : FF7110001 = "F7110001.DAT")	

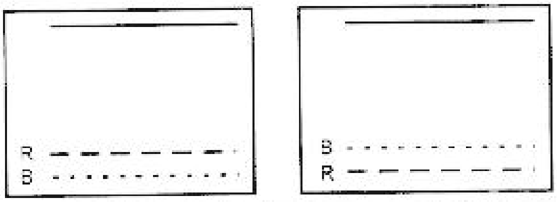
Conditions

Signal : Turn off the R,G,B (sync signal only)
Adjust Menu : 4) VIDEO

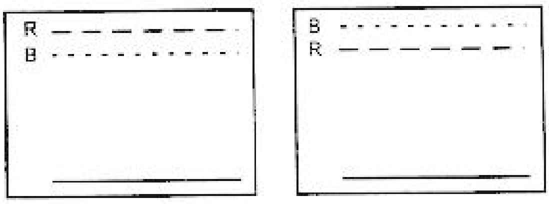

CRT CUT- OFF ADJUSTMENT
J4 Set G2 9300k value to "00" (Min)
J5 Set data value to "9A" for LOW LIGHT (R),(G),(B) 9300k
J6 Press [→] until the raster appears with any one of three (R,G,B) colors
If Red appears in J6
J7 Set Value to "FF" for LOW LIGHT (R) 9300k
J8 Press [→] on G2 9300k until the raster appears with any one of two (G or B) colors.
If Green appears in J8
J9 Set Value to "FF" for LOW LIGHT (G) 9300k
J10 Press [→] on G2 9300k until Blue raster appears slightly.
J11 Adjust LOW LIGHT (R) 9300k LOW LIGHT (G) 9300k until these raster appears slightly
If Blue appears in J8
J9 Set Value to "FF" for LOW LIGHT (B) 9300k
J10 Press [→] on G2 9300k until Green raster appears slightly.
J11 Adjust LOW LIGHT (R) 9300k LOW LIGHT (B) 9300k until these raster appears slightly
If Green appears in J6
J7 Set Value to "FF" for LOW LIGHT (G) 9300k
J8 Press [→] on G2 9300k until the raster appears with any one of two (R or B) colors.
If Red appears in J8
J9 Set Value to "FF" for LOW LIGHT (R) 9300k
J10 Press [→] on G2 9300k until Blue raster appears slightly.
J11 Adjust LOW LIGHT (R) 9300k LOW LIGHT (G) 9300k until these raster appears slightly.
If Blue appears in J8
J9 Set Value to "FF" for LOW LIGHT (B) 9300k
J10 Press [→] on G2 9300k until Red raster appears slightly.
J11 Adjust LOW LIGHT (G) 9300k LOW LIGHT (B) 9300k until these raster appears slightly.
If Blue appears in J6
J7 Set Value to "FF" for LOW LIGHT (B) 9300k
J8 Press [→] on G2 9300k until the raster appears with any one of two (G or B) colors.
If Red appears in J8
J9 Set Value to "FF" for LOW LIGHT (R) 9300k
J10 Press [→] on G2 9300k until Green raster appears slightly.
J11 Adjust LOW LIGHT (R) 9300k LOW LIGHT (B) 9300k until these raster appears slightly.
If Green appears in J8
J9 Set Value to "FF" for LOW LIGHT (G) 9300k
J10 Press [→] on G2 9300k until Red raster appears slightly.
J11 Adjust LOW LIGHT (G) 9300k LOW LIGHT (B) 9300k until these raster appears slightly.
J12 Change 16 gradation grayscale pattern, then adjust G2 9300k so the 2nd level of gray appears slightly.

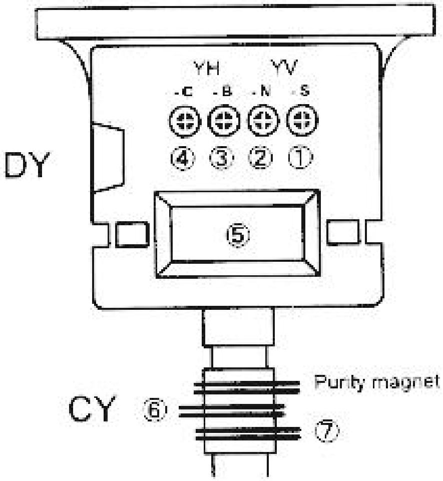
2. Adjustment Location for Purity and Convergence

① Differential VR YV-S

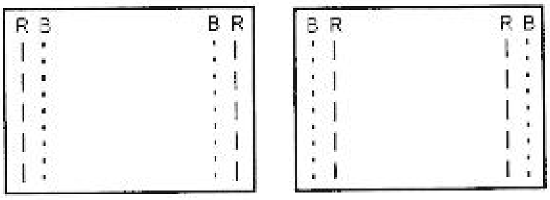


② Differential VR YV-N

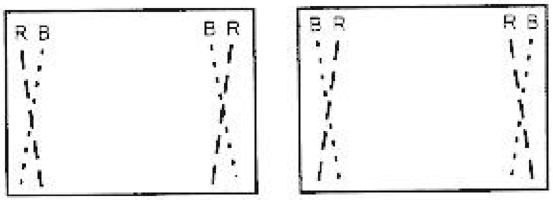



YH
YV
-C
-B
-N
-S
④
③
②
①
DY
⑤
CY
⑥
Purity magnet
⑦

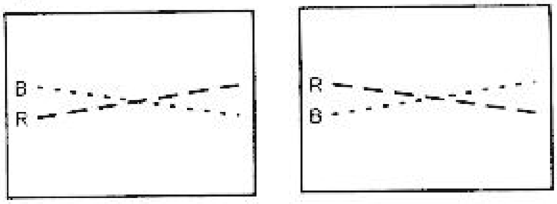
③ Differential VR YH-B



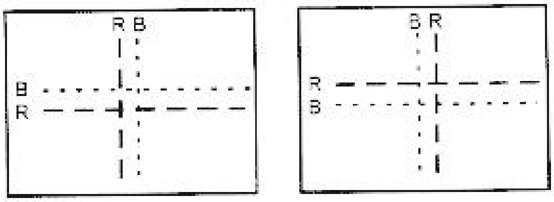
④ Differential VR YH-C



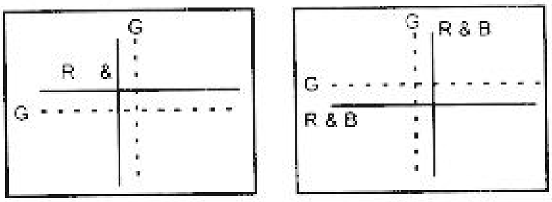
⑤ Differential Coil



⑥ Four-pole magnet



⑦ Six-pole magnet

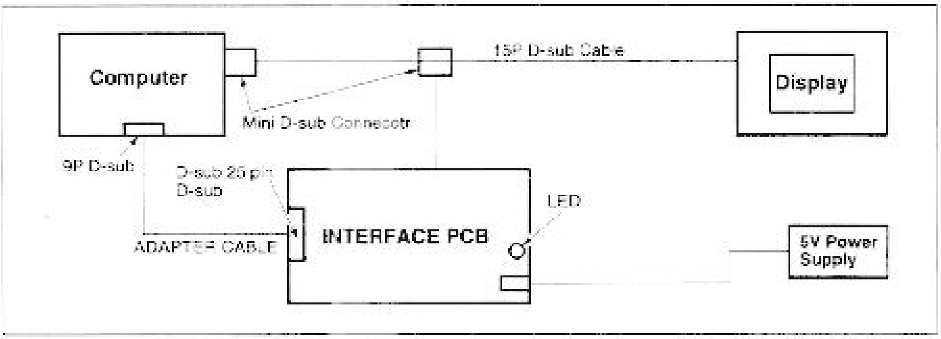


TECHNICAL INFORMATION FOR DDC

- It must be noted that this monitors is designed to be applicable to DDC1 communication the following points are different from ordinary monitors.
  1. Use the signal cable, the which is furnished as an accessory (applicable to DDC1) only.
  2. When replacing a PCB on which ROM for DDC1 is mounted, data writing is required.
     In addition to the above, a computer applicable to WINDOWS and a 5V power supply unit are required.

- DDC1 Data Read/write System
  1. Communication jig
     (1) The composition of Communication jig.
     ① Interface PCB. ② Adapter cable (D-SUB 25P → 9P) ③ 15P D-SUB cable

     (2) Connection diagram for communication jig.



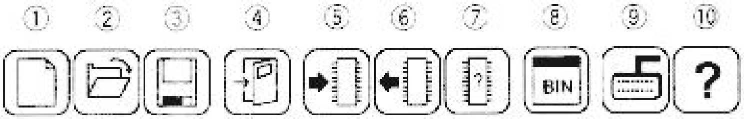
(3) Procedure to turn on the power:
① Make connections as shown above.
② Turn on the computer.
③ Turn on the power supply of communication jig.
④ Turn on the power supply of the MONITOR.
(Note). If the above-mentioned operation is normal, LED of the communication jig turns green after step (4).
If this LED is red, repeat the steps (3) and (4).

(4) Confirmation of DDC mode
LED is mounted on the communication jig. According to its color, the DDC mode can be discriminated.

- When LED is green.	DDC1 mode.
- When LED is orange	DDC2B mode.
- When LED is red.	Transmission error.
- When LED is not lit.	Obsolete.

2. Preliminary arrangements for using DDC data read/write software.
   (1) Copy DDC WRITE. EXE from floppy disk to hard disk drive (Name: \PanaTool Directory).
   (2) Register DDC data read/write software (DDCWRITE.EXE) in the Icon.
   ① Click the menu bar "Icon" of the program manager.
   ② Select "register and group create" from the pull down menu.
   ③ Select "group create."
   ④ Name the group PanaTool and register the group.
   ⑤ Repeat (1) and (2) again and select "Icon registration."
   ⑥ Enter "DDC1/2B" for [Title] and "Hard disk drive name: \PanaTool\DDCWRITE. EXE" for [Command line]. Then select [OK].
3. How to use DDC data read/write software.
   (1) Start of DDC data read/write software.
   Double-click the "DDC1/2B" Icon in the PanaTool group.
   (2) Meaning of a button displayed.
   The tool bar indicates the nine icons shown below.

These icons are explained, from left to right :


①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
BIN
?

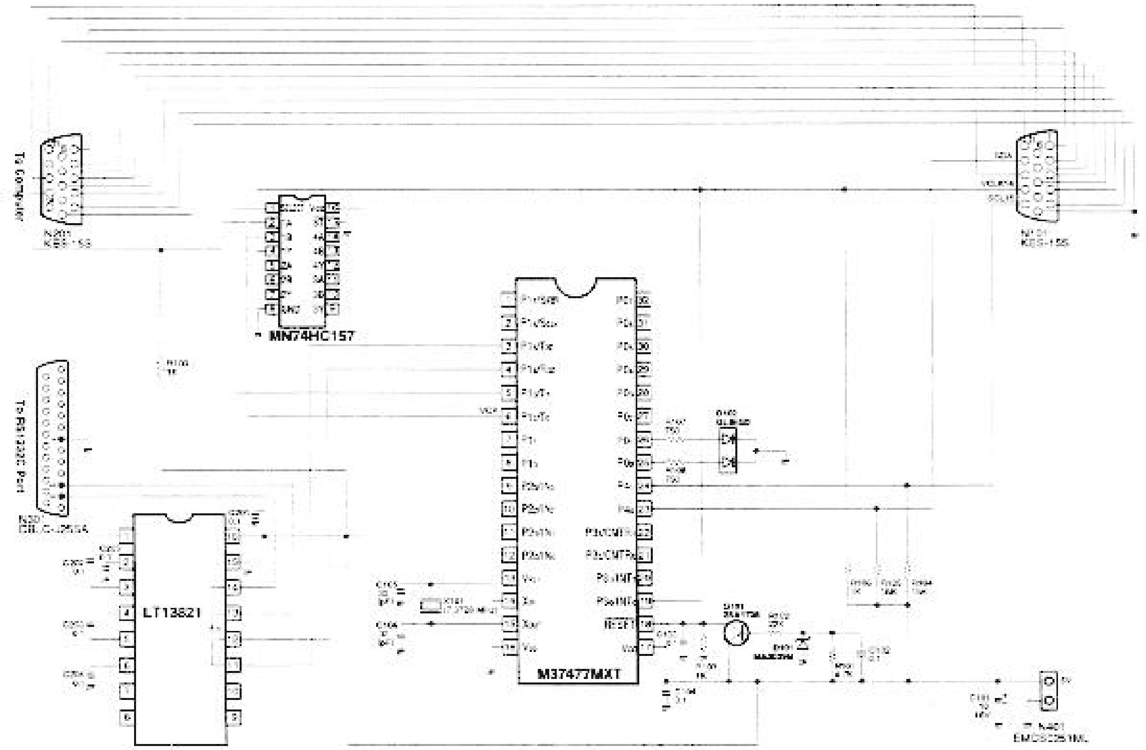
Icon ① : Initialization of screen display contents.
Icon ② : File is opened and displayed on the screen.
Icon ③ : Data are stored in a file.
Icon ④ : Finish the DDC data read/write software
Icon ⑤ : Data displayed on the screen are written in EEPROM.
Icon ⑥ : Contents of EEPROM are displayed on the screen.
Icon ⑦ : Contents of EEPROM are compared with the data displayed on the screen.
Icon ⑧ : Check binary data by text format.
Icon ⑨ : Communication port setting.
Contents of setting : PORT → Using Communication port No.
Baud rate → 9600, Data → 8 bits, Parity → Nil, Stop → 1 bits
Icon ⑩ : Version information display.

(3) Using the tool bar explained in (2) above, write data in EEPROM and make operations of reading, etc. A pop-up window may be displayed on the way. In such a case, select a proper one according to the message.

(Example 1) EEPROM data are displayed on the screen.
① Click the icon (6th from the left) in the tool bar, with the arrow pointing from the memory chip.
② Decided whether reading is started in DDC1 mode or DDC2B mode.
③ Select START.

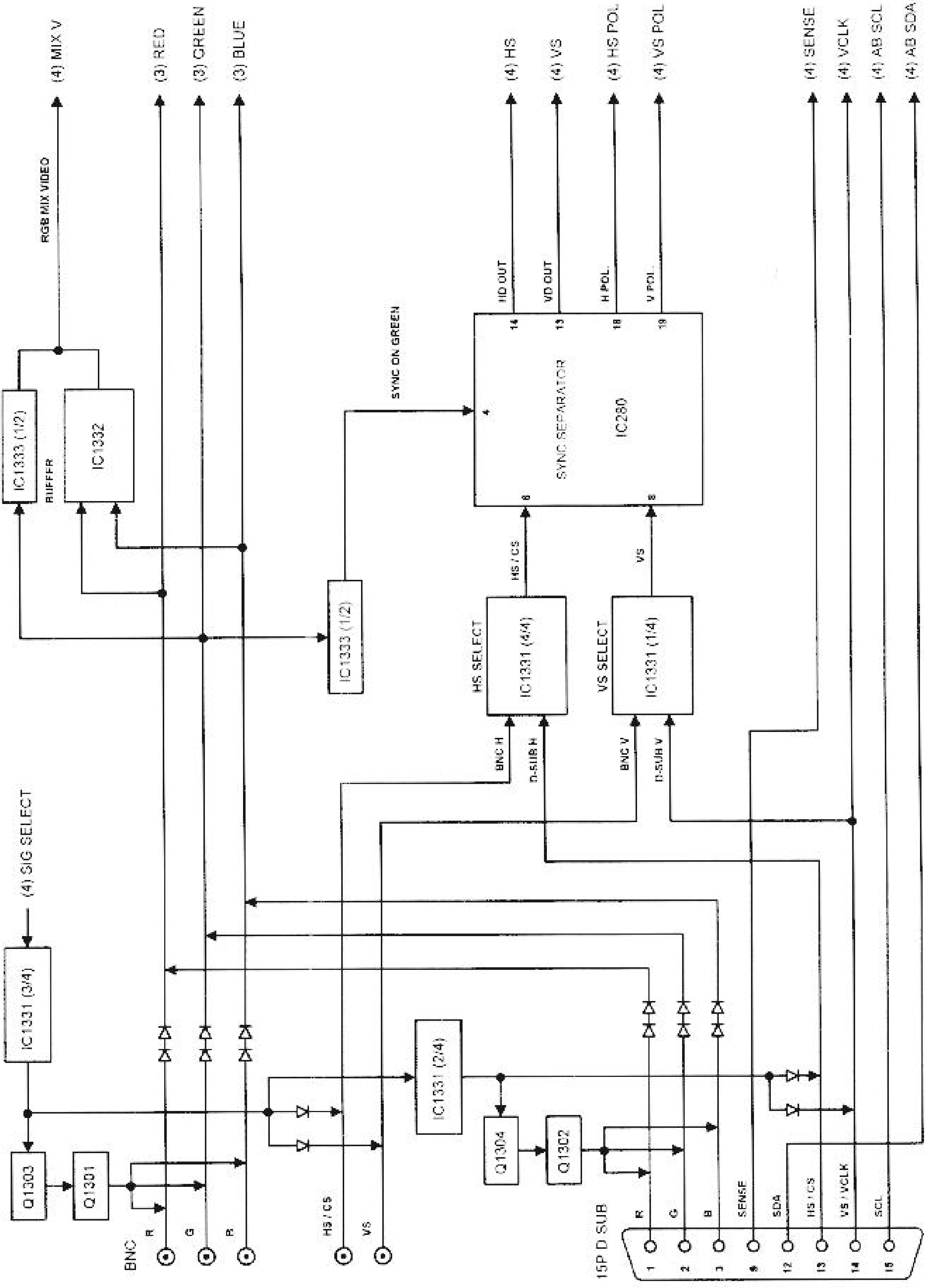
(Example 2) Data displayed on the screen are written in EEPROM.
① Click the icon (5th from the left) in the tool bar, with the arrow pointing toward in the memory chip.
② Select START.

SCHEMATIC DIAGRAM FOR INTERFACE

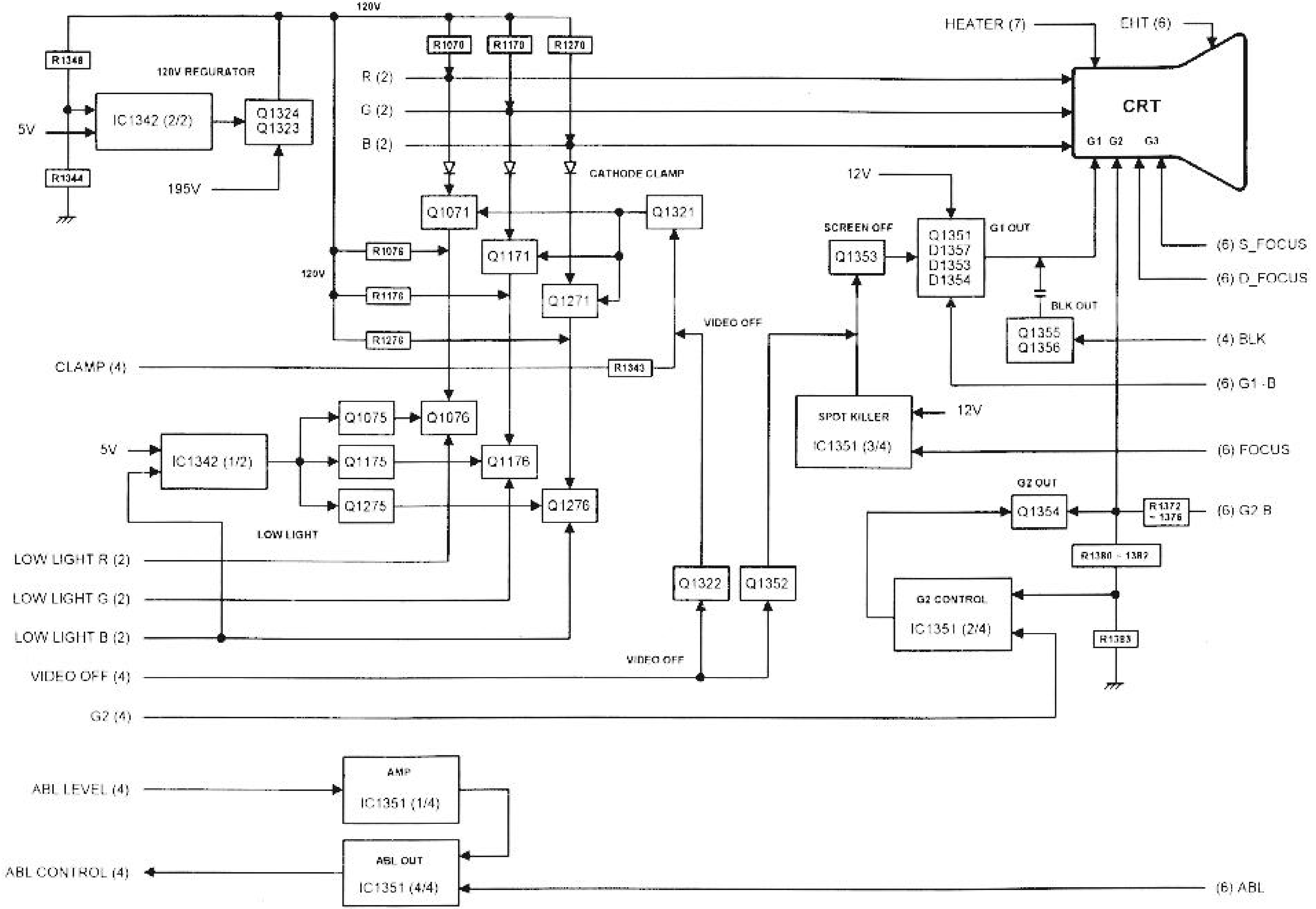

To Computer
N201
KES-155
MN74HC157
To RS1232C Port
N301
CBLC-J25SA
LT13821
M37477MXT
X101
RESET
SDA
VCLK
SCL
N101
KES-155
N401
EMCSC051ML

BLOCK DIAGRAM

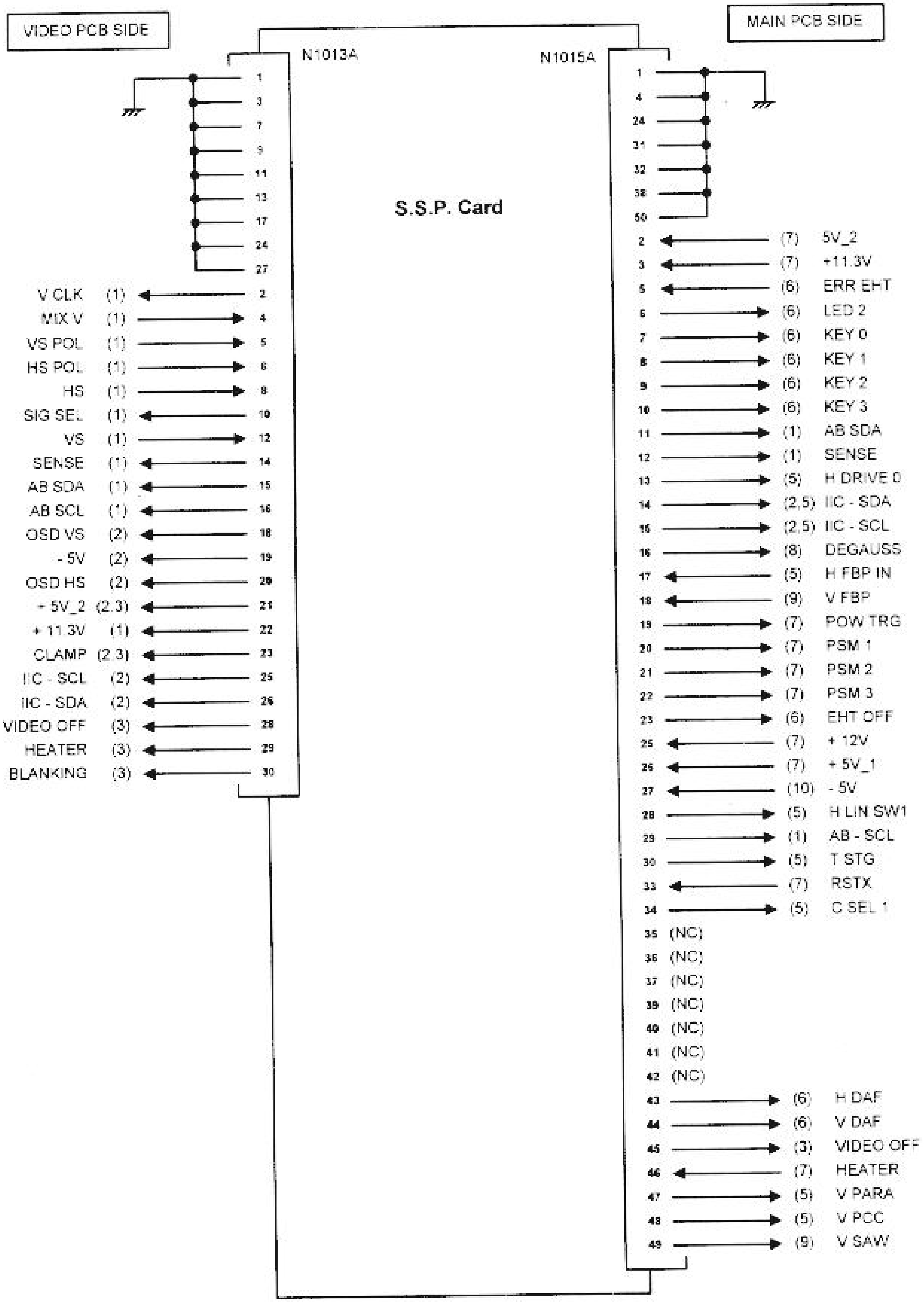
SHEET (1) SIGNAL SELECT / SYNC SEPARATE


(4) SIG SELECT
IC1331 (3/4)
Q1303
Q1301
BNC
R
G
B
HS / CS
VS
(4) MIX V
RGB MIX VIDEO
IC1333 (1/2)
BUFFER
IC1332
(3) RED
(3) GREEN
(3) BLUE
IC1333 (1/2)
SYNC ON GREEN
IC1331 (2/4)
Q1304
Q1302
HS SELECT
IC1331 (4/4)
BNC H
D-SUB H
HS / CS
VS SELECT
IC1331 (1/4)
BNC V
D-SUB V
VS
SYNC SEPARATOR
IC280
4
8
8
14
13
18
19
HD OUT
VD OUT
H POL
V POL
(4) HS
(4) VS
(4) HS POL
(4) VS POL
(4) SENSE
(4) VCLK
(4) AB SCL
(4) AB SDA
15P D SUB
R
G
B
SENSE
SDA
HS / CS
VS / VCLK
SCL
1
2
3
8
12
13
14
15

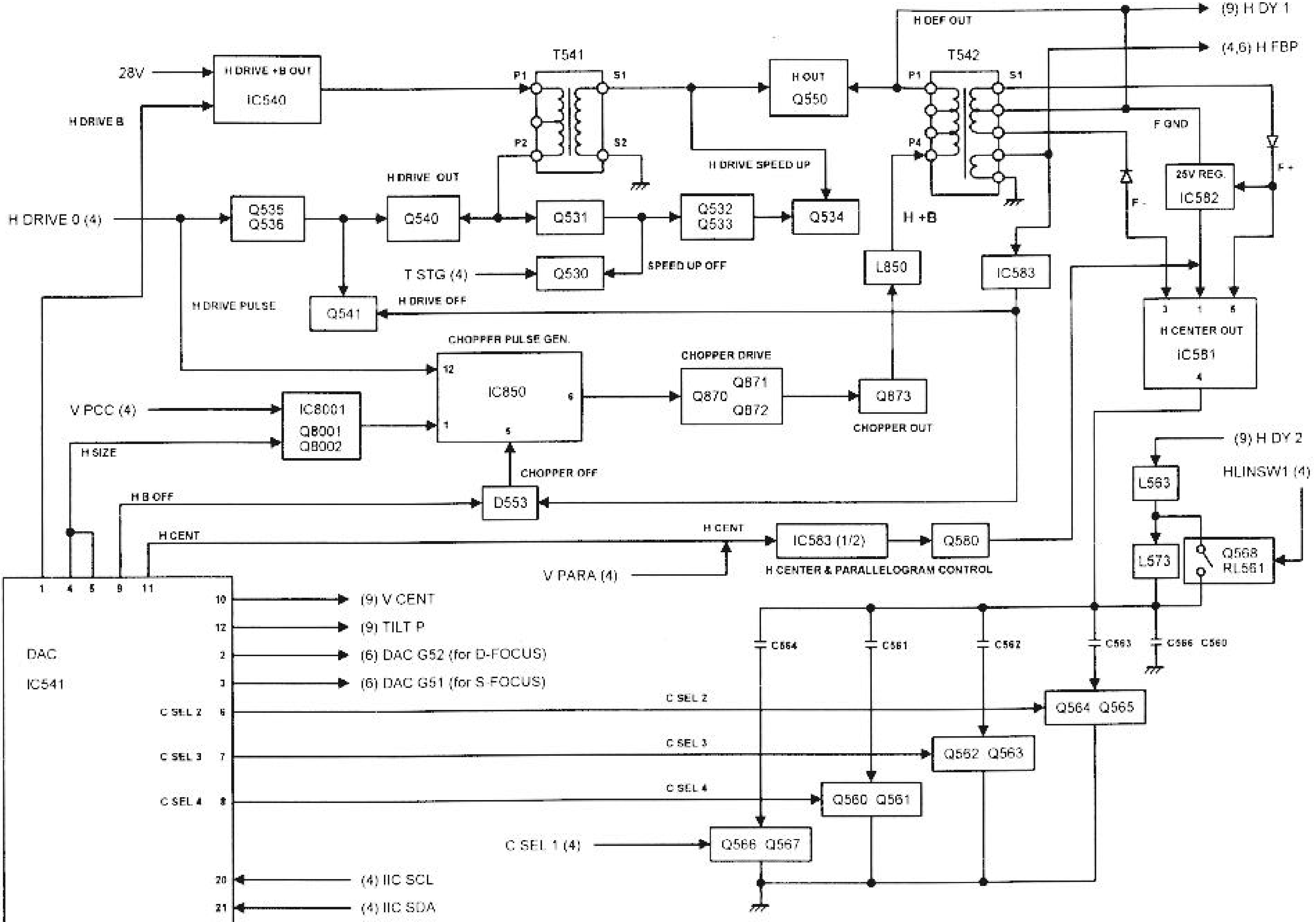
SHEET (3) VIDEO OUT PUT


120V
R1348
120V REGURATOR
5V
IC1342 (2/2)
Q1324
Q1323
R1344
195V
R1070
R1170
R1270
R (2)
G (2)
B (2)
HEATER (7)
EHT (6)
CRT
G1
G2
G3
CATHODE CLAMP
Q1071
Q1321
R1076
Q1171
120V
R1176
Q1271
R1276
CLAMP (4)
R1343
VIDEO OFF
12V
SCREEN OFF
Q1353
Q1351
D1357
D1353
D1354
G1 OUT
BLK OUT
Q1355
Q1356
(6) S_FOCUS
(6) D_FOCUS
(4) BLK
(6) G1 -B
SPOT KILLER
IC1351 (3/4)
12V
(6) FOCUS
Q1075
Q1076
5V
IC1342 (1/2)
Q1175
Q1176
Q1275
Q1276
LOW LIGHT
LOW LIGHT R (2)
LOW LIGHT G (2)
LOW LIGHT B (2)
VIDEO OFF (4)
G2 (4)
Q1322
Q1352
VIDEO OFF
G2 OUT
Q1354
R1372
~ 1376
(6) G2 B
R1380 ~ 1382
G2 CONTROL
IC1351 (2/4)
R1383
ABL LEVEL (4)
AMP
IC1351 (1/4)
ABL OUT
IC1351 (4/4)
ABL CONTROL (4)
(6) ABL

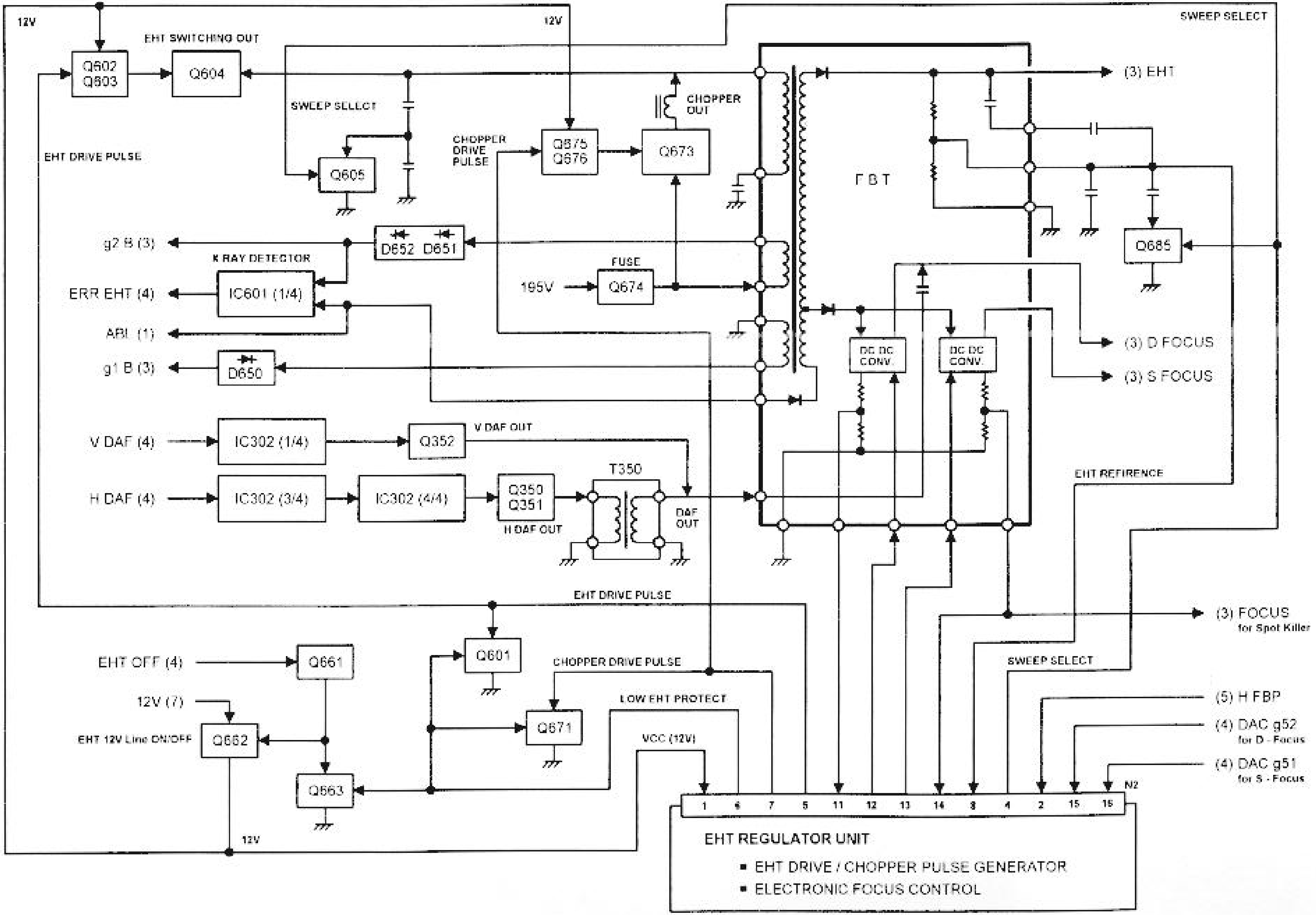
SHEET (4) SUPER SIGNAL PROCESSOR


VIDEO PCB SIDE
N1013A
S.S.P. Card
N1015A
MAIN PCB SIDE
1
3
7
9
11
13
17
24
27
V CLK (1) 2
MIX V (1) 4
VS POL (1) 5
HS POL (1) 6
HS (1) 8
SIG SEL (1) 10
VS (1) 12
SENSE (1) 14
AB SDA (1) 15
AB SCL (1) 16
OSD VS (2) 18
- 5V (2) 19
OSD HS (2) 20
+ 5V_2 (2.3) 21
+ 11.3V (1) 22
CLAMP (2.3) 23
IIC - SCL (2) 25
IIC - SDA (2) 26
VIDEO OFF (3) 28
HEATER (3) 29
BLANKING (3) 30
1
4
24
31
32
38
50
2 (7) 5V_2
3 (7) +11.3V
5 (6) ERR EHT
6 (6) LED 2
7 (6) KEY 0
8 (6) KEY 1
9 (6) KEY 2
10 (6) KEY 3
11 (1) AB SDA
12 (1) SENSE
13 (5) H DRIVE 0
14 (2,5) IIC - SDA
15 (2,5) IIC - SCL
16 (8) DEGAUSS
17 (5) H FBP IN
18 (9) V FBP
19 (7) POW TRG
20 (7) PSM 1
21 (7) PSM 2
22 (7) PSM 3
23 (6) EHT OFF
25 (7) + 12V
26 (7) + 5V_1
27 (10) - 5V
28 (5) H LIN SW1
29 (1) AB - SCL
30 (5) T STG
33 (7) RSTX
34 (5) C SEL 1
35 (NC)
36 (NC)
37 (NC)
39 (NC)
40 (NC)
41 (NC)
42 (NC)
43 (6) H DAF
44 (6) V DAF
45 (3) VIDEO OFF
46 (7) HEATER
47 (5) V PARA
48 (5) V PCC
49 (9) V SAW

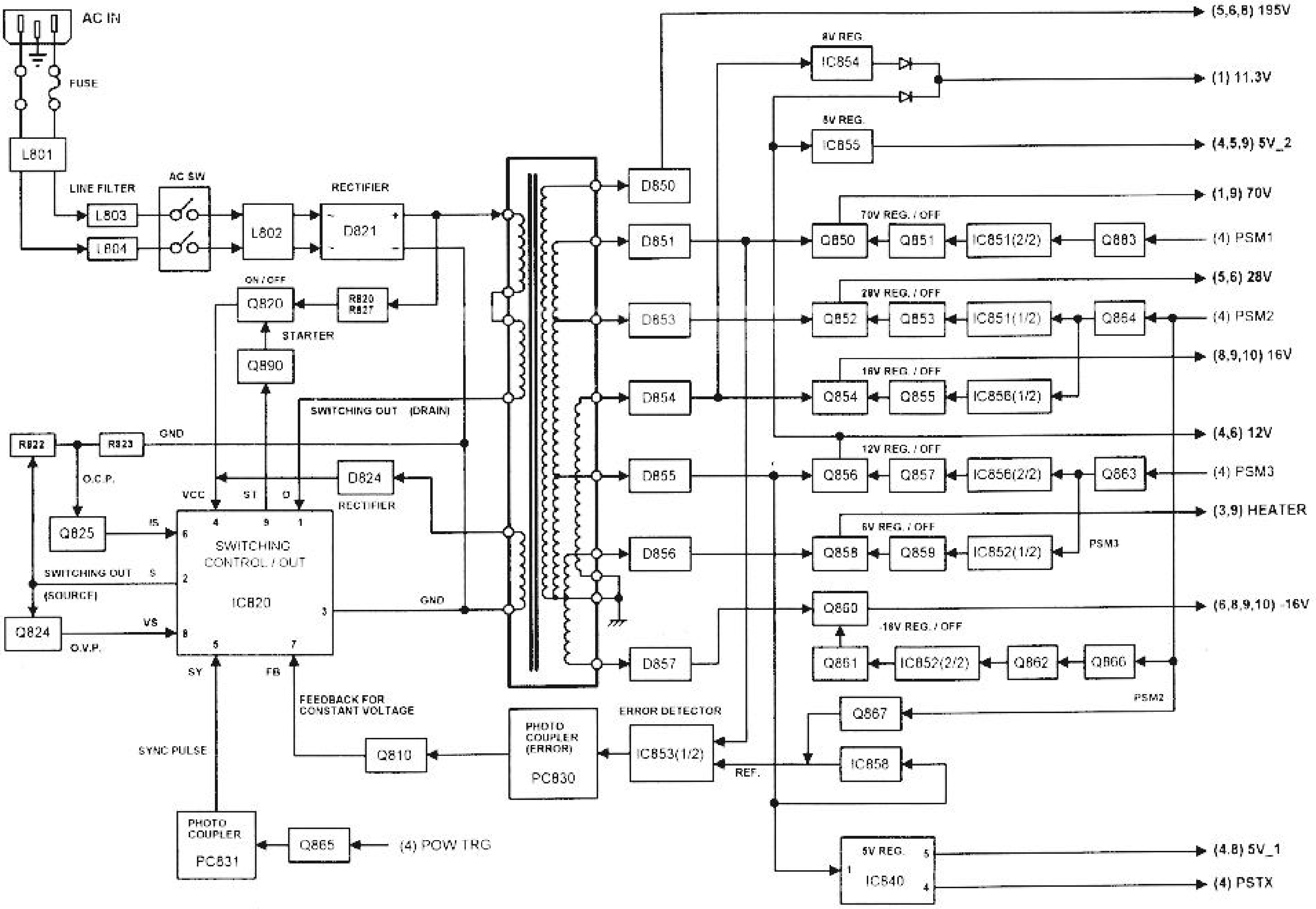
SHEET (5) H DEFLCTION OUT / H LIN


28V
H DRIVE +B OUT
IC540
H DRIVE B
T541
P1
S1
P2
S2
H OUT
Q550
H DEF OUT
T542
P4
(9) H DY 1
(4,6) H FBP
F GND
F +
F -
25V REG.
IC582
H DRIVE 0 (4)
Q535
Q536
H DRIVE OUT
Q540
Q531
Q532
Q533
Q534
H DRIVE SPEED UP
H +B
T STG (4)
Q530
SPEED UP OFF
L850
IC583
H DRIVE PULSE
Q541
H DRIVE OFF
3
1
5
H CENTER OUT
IC581
4
CHOPPER PULSE GEN.
12
IC850
6
CHOPPER DRIVE
Q870
Q871
Q872
Q873
CHOPPER OUT
V PCC (4)
IC8001
Q8001
Q8002
H SIZE
CHOPPER OFF
H B OFF
D553
(9) H DY 2
L563
HLINSW1 (4)
H CENT
IC583 (1/2)
Q580
H CENTER & PARALLELOGRAM CONTROL
V PARA (4)
L573
Q568
RL561
DAC
IC541
1
4
5
9
11
10
(9) V CENT
12
(9) TILT P
2
(6) DAC G52 (for D-FOCUS)
3
(6) DAC G51 (for S-FOCUS)
C SEL 2
6
C SEL 3
7
C SEL 4
8
C564
C561
C562
C563
C566 C560
Q564 Q565
Q562 Q563
Q560 Q561
C SEL 1 (4)
Q566 Q567
20
(4) IIC SCL
21
(4) IIC SDA

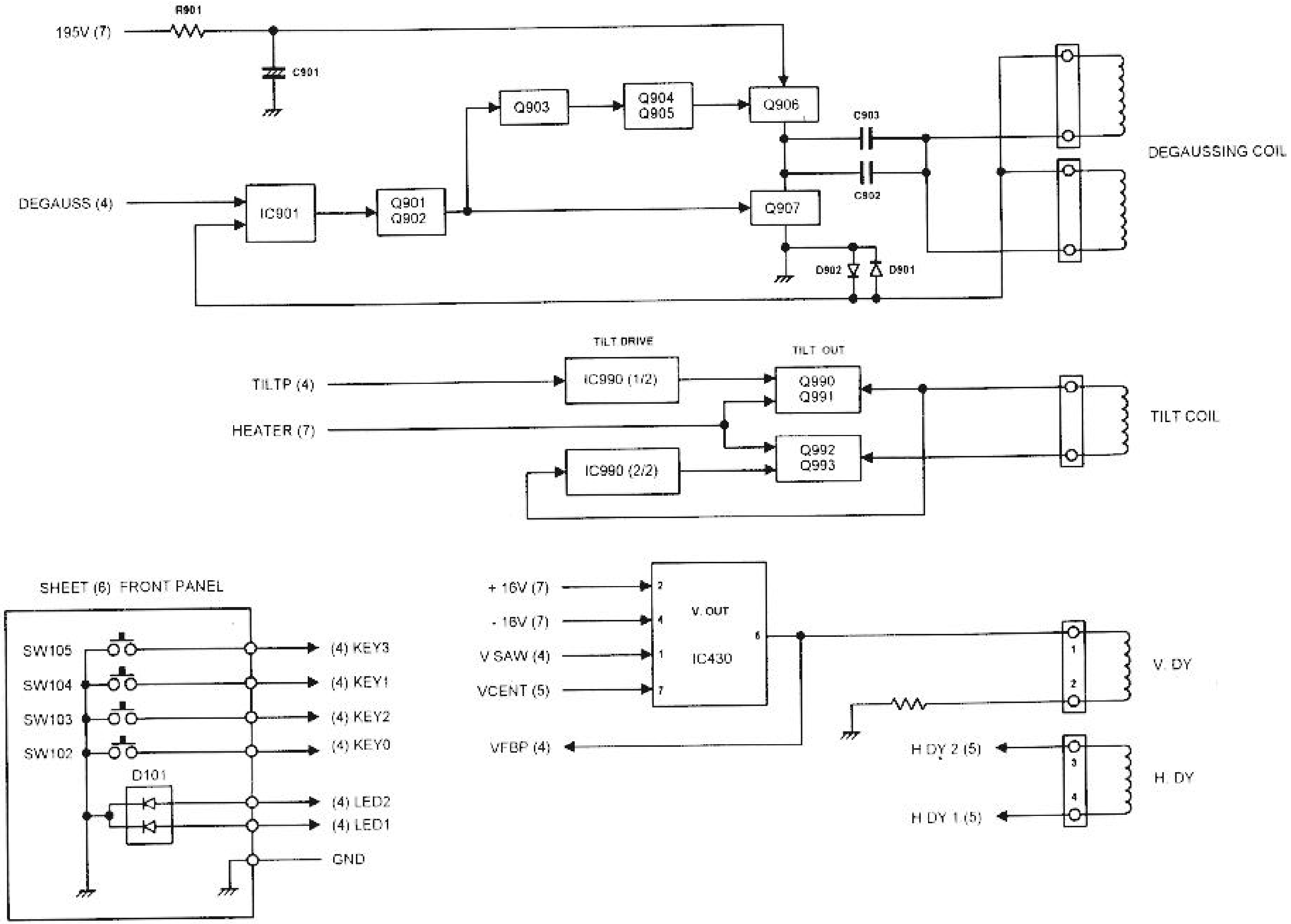
SHEET (6) EHT OUT


12V
EHT SWITCHING OUT
Q602
Q603
Q604
EHT DRIVE PULSE
SWEEP SELECT
Q605
12V
CHOPPER
DRIVE
PULSE
Q675
Q676
Q673
CHOPPER
OUT
F B T
(3) EHT
SWEEP SELECT
Q685
g2 B (3)
X RAY DETECTOR
D652
D651
ERR EHT (4)
IC601 (1/4)
FUSE
195V
Q674
ABL (1)
g1 B (3)
D650
DC DC
CONV.
DC DC
CONV.
(3) D FOCUS
(3) S FOCUS
V DAF (4)
IC302 (1/4)
Q352
V DAF OUT
H DAF (4)
IC302 (3/4)
IC302 (4/4)
Q350
Q351
H DAF OUT
T350
DAF
OUT
EHT REFIRENCE
EHT DRIVE PULSE
(3) FOCUS
for Spot Killer
EHT OFF (4)
Q661
Q601
CHOPPER DRIVE PULSE
SWEEP SELECT
12V (7)
EHT 12V Line ON/OFF
Q662
Q671
LOW EHT PROTECT
VCC (12V)
(5) H FBP
(4) DAC g52
for D - Focus
(4) DAC g51
for S - Focus
N2
Q663
12V
1
6
7
5
11
12
13
14
3
4
2
15
16
EHT REGULATOR UNIT
■ EHT DRIVE / CHOPPER PULSE GENERATOR
■ ELECTRONIC FOCUS CONTROL

SHEET (7) POWER SUPPLY

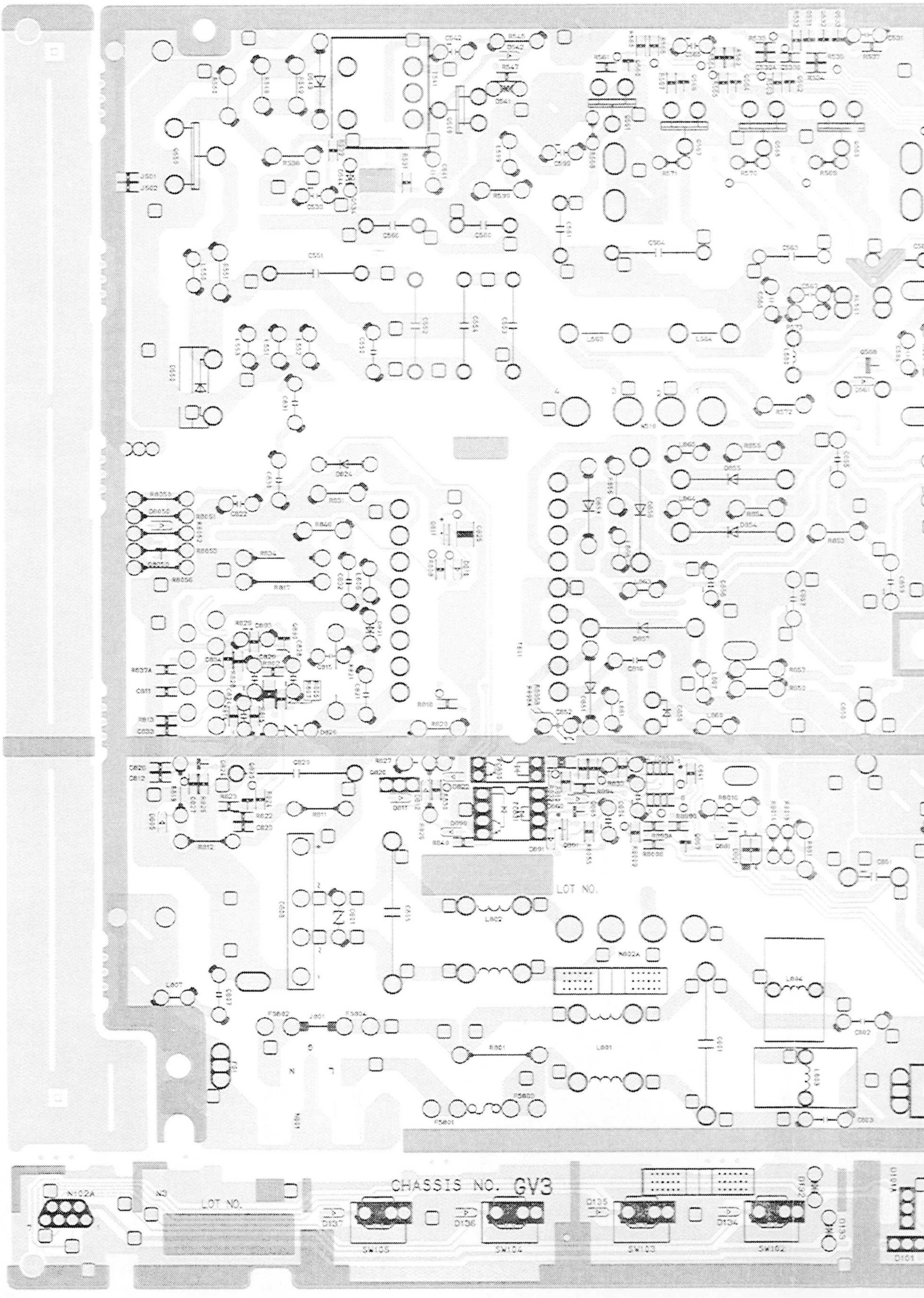

AC IN
FUSE
L801
LINE FILTER
L803
L804
AC SW
L802
RECTIFIER
D821
ON / OFF
Q820
R820
R827
STARTER
Q890
SWITCHING OUT (DRAIN)
R822
R823
GND
O.C.P.
Q825
IS
VCC
ST
D
D824
RECTIFIER
SWITCHING CONTROL / OUT
IC820
SWITCHING OUT S
(SOURCE)
Q824
VS
O.V.P.
SY
FB
GND
SYNC PULSE
FEEDBACK FOR CONSTANT VOLTAGE
Q810
PHOTO COUPLER (ERROR)
PC830
ERROR DETECTOR
IC853(1/2)
REF.
PHOTO COUPLER
PC831
Q865
(4) POW TRG
D850
D851
D853
D854
D855
D856
D857
8V REG.
IC854
5V REG.
IC855
70V REG. / OFF
Q850
Q851
IC851(2/2)
Q883
28V REG. / OFF
Q852
Q853
IC851(1/2)
Q864
16V REG. / OFF
Q854
Q855
IC858(1/2)
12V REG. / OFF
Q856
Q857
IC856(2/2)
Q863
6V REG. / OFF
Q858
Q859
IC852(1/2)
PSM3
Q860
-16V REG. / OFF
Q861
IC852(2/2)
Q862
Q866
PSM2
Q867
IC858
5V REG.
IC840
(5,6,8) 195V
(1) 11.3V
(4,5,9) 5V_2
(1,9) 70V
(4) PSM1
(5,6) 28V
(4) PSM2
(8,9,10) 16V
(4,6) 12V
(4) PSM3
(3,9) HEATER
(6,8,9,10) -16V
(4,8) 5V_1
(4) PSTX

SHEET (8) DEGAUSS

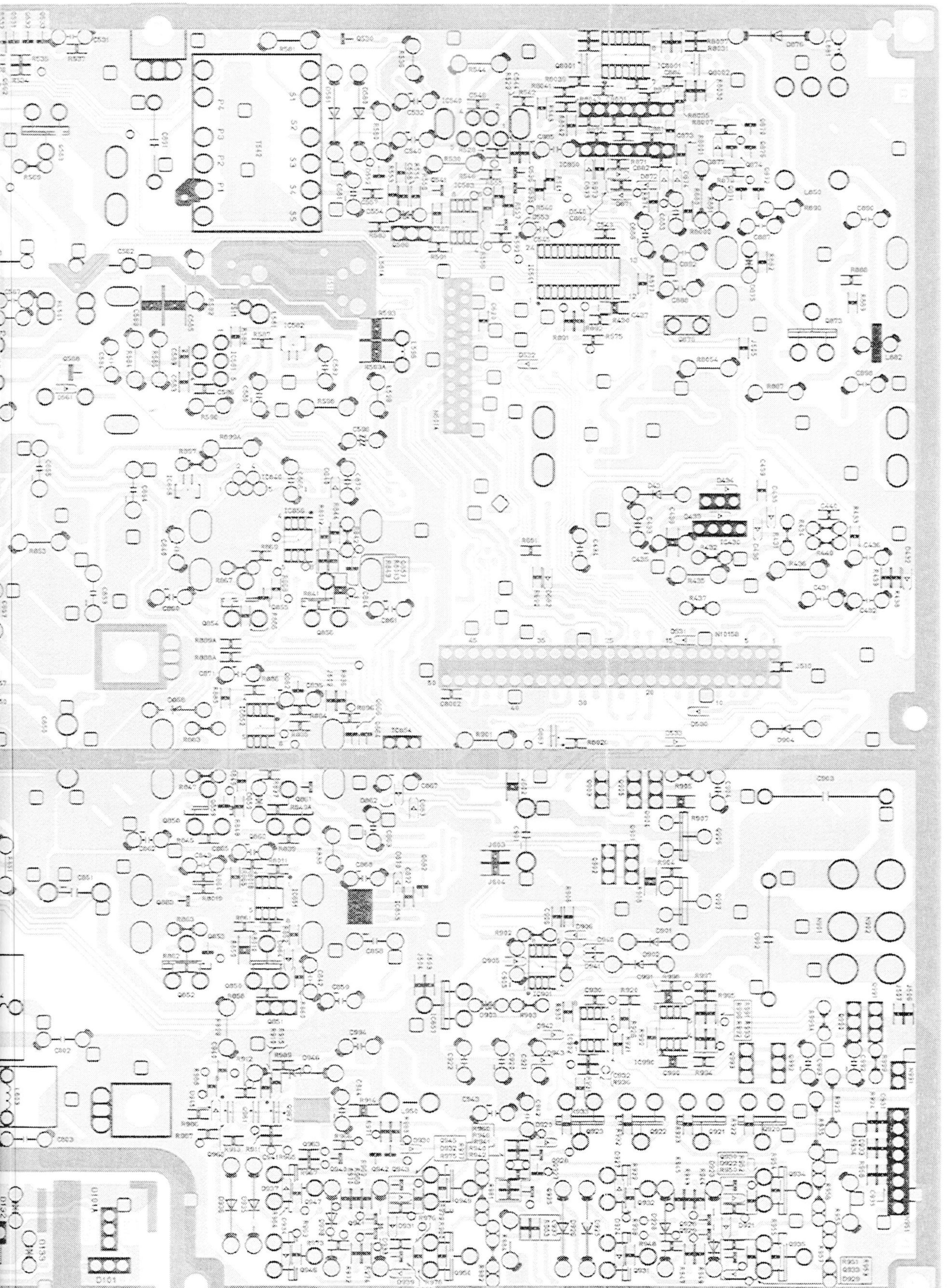


195V (7)
R901
C901
Q903
Q904
Q905
Q906
C903
C902
DEGAUSSING COIL
DEGAUSS (4)
IC901
Q901
Q902
Q907
D902
D901
TILT DRIVE
TILT OUT
TILTP (4)
IC990 (1/2)
Q990
Q991
HEATER (7)
Q992
Q993
IC990 (2/2)
TILT COIL
SHEET (6) FRONT PANEL
SW105
SW104
SW103
SW102
D101
(4) KEY3
(4) KEY1
(4) KEY2
(4) KEY0
(4) LED2
(4) LED1
GND
+ 16V (7)
- 16V (7)
V SAW (4)
VCENT (5)
VFBP (4)
2
4
1
7
6
V. OUT
IC430
1
2
V. DY
H DY 2 (5)
H DY 1 (5)
3
4
H. DY

(Solder side)

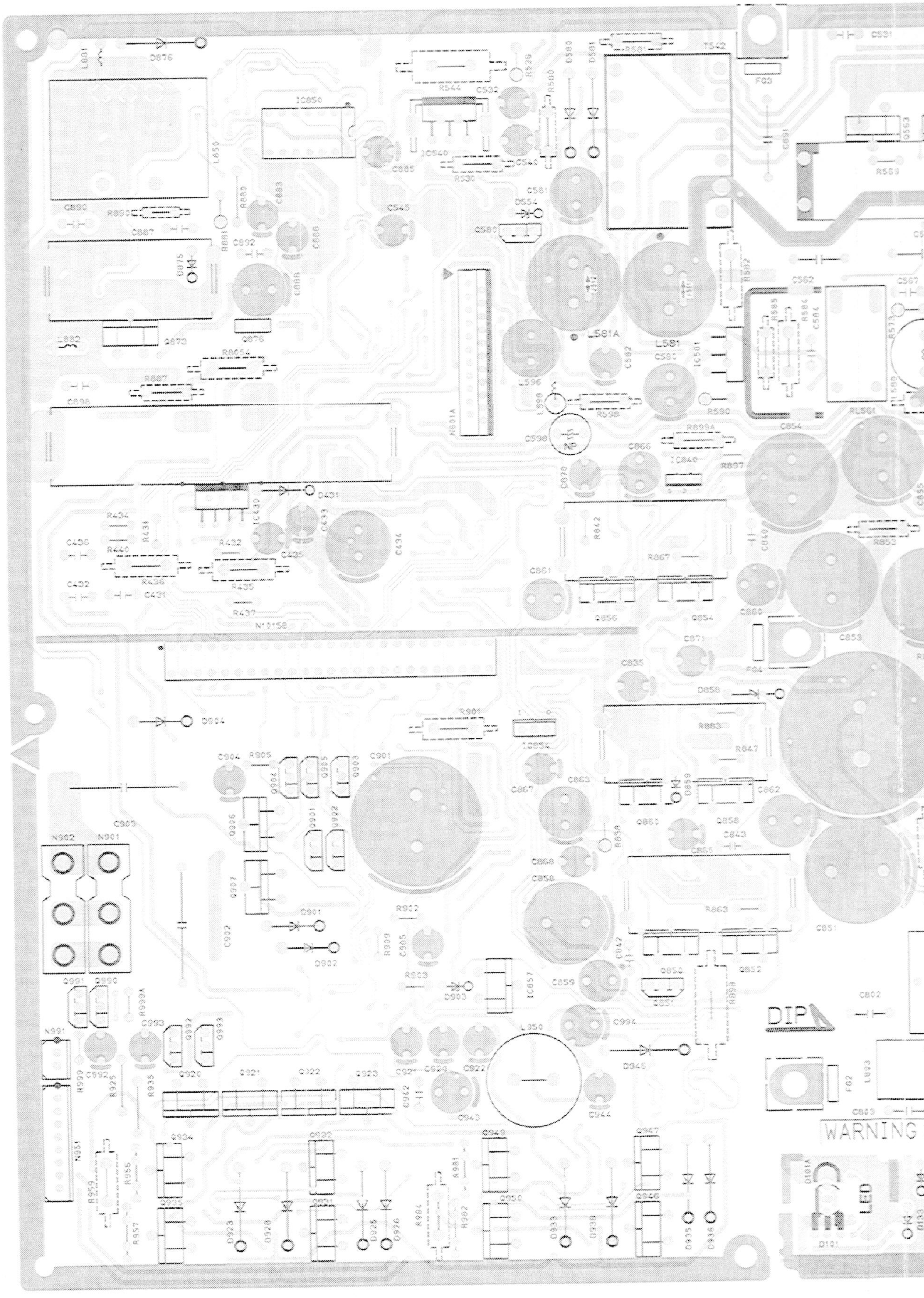

LOT NO.
CHASSIS NO. GV3
LOT NO.
N122A
SW105
SW104
SW103
SW102
D137
D136
D135
D134
D101
L802
L801
L804
L803
L563
L564
N502A

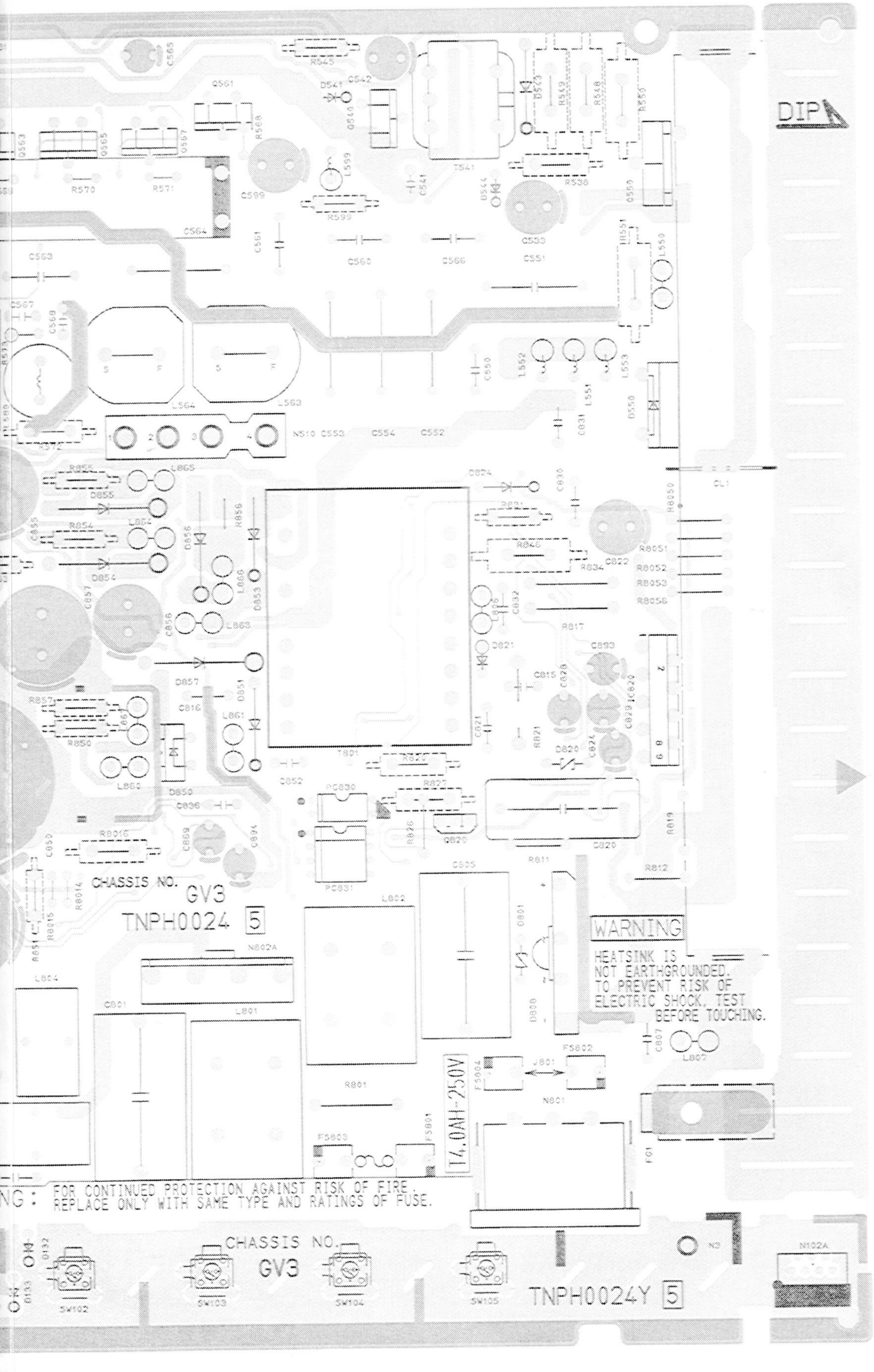
DUCTOR VIEW



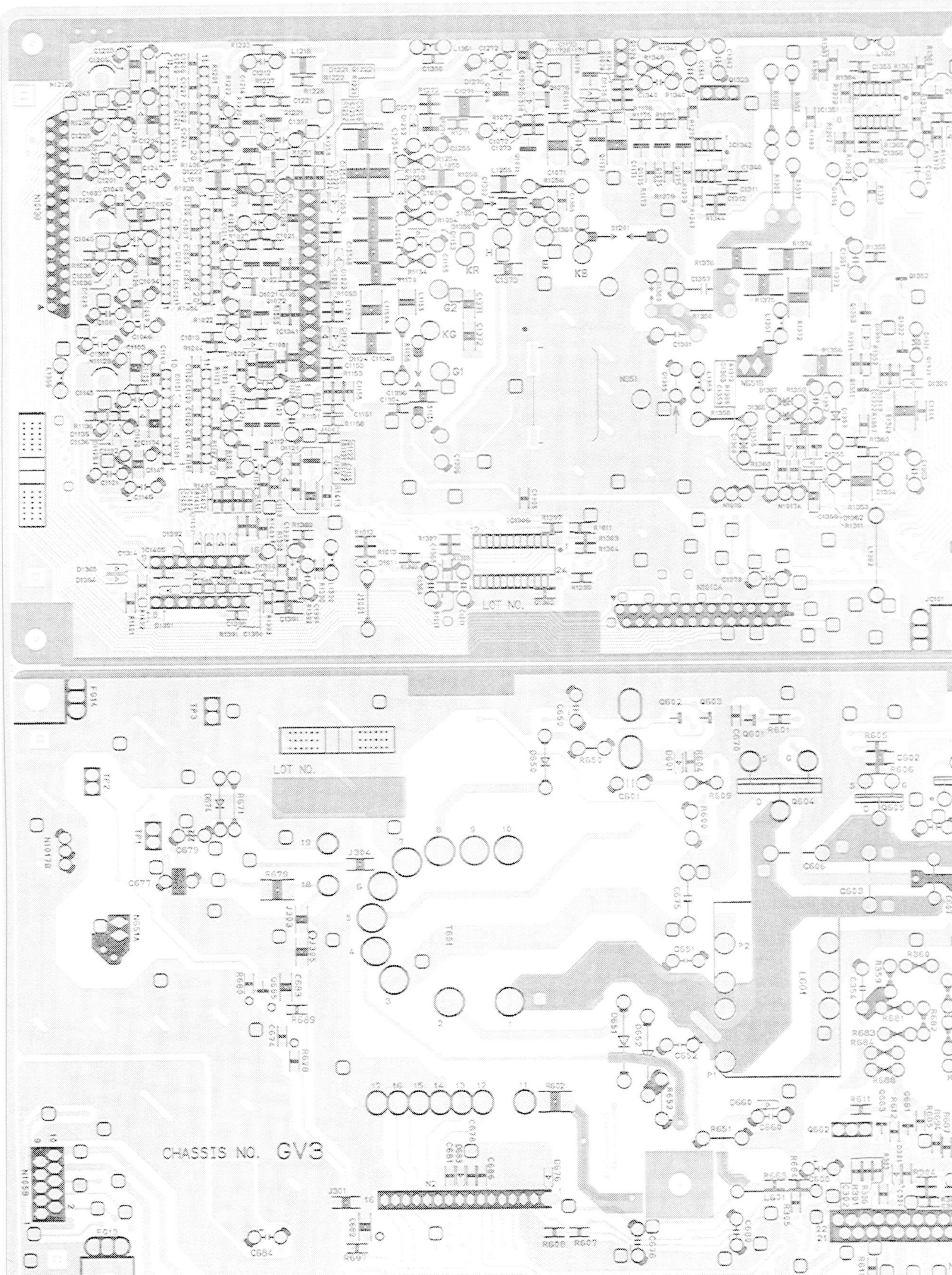
P4
P3
P2
P1
S1
S2
S3
S4
S5
J510
D101
C903

OARD (Parts side)

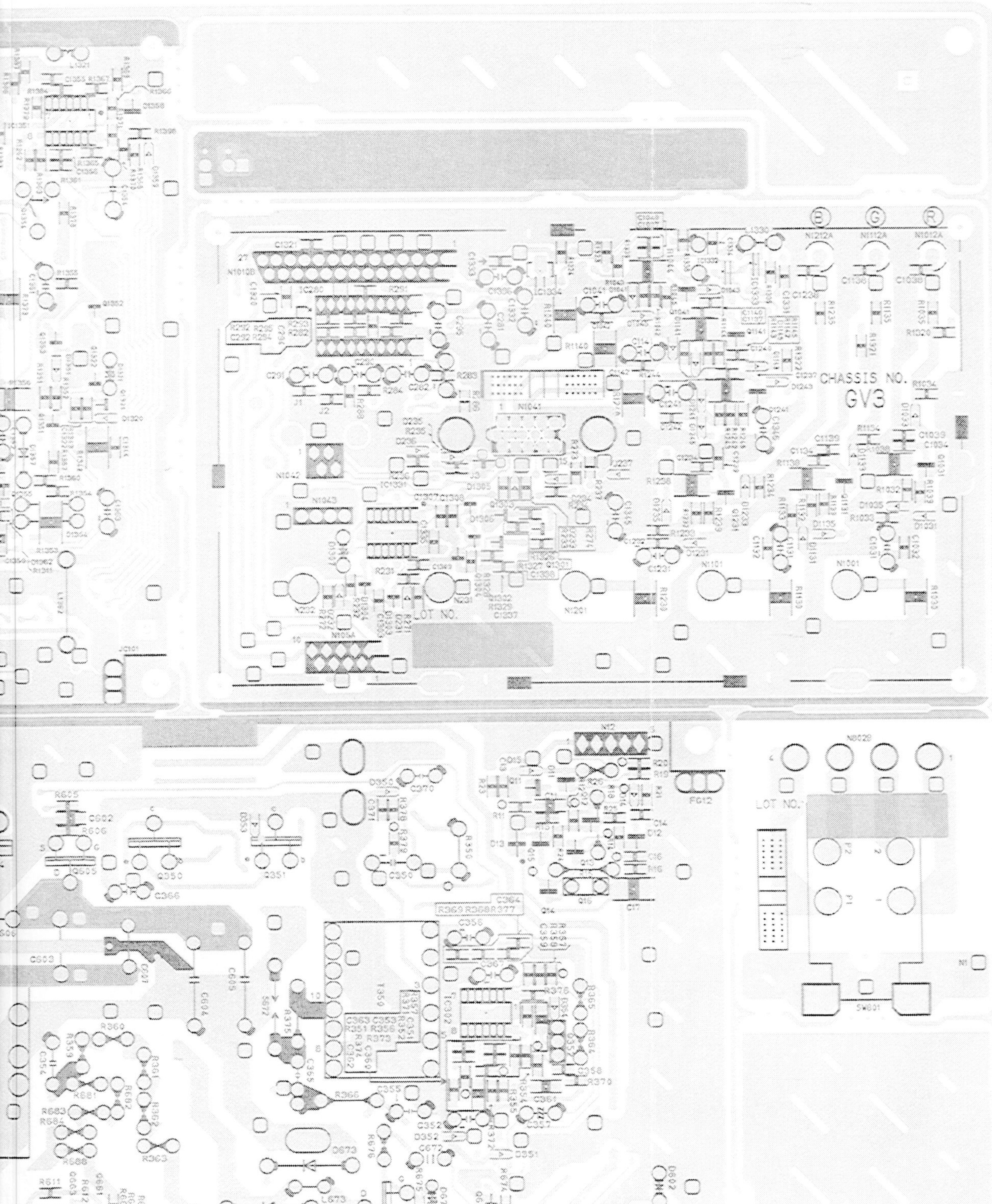

L881
D876
R544
C530
R539
D580
D581
R581
T542
F03
C531
IC850
IC540
C885
R530
C540
L850
C890
R893
C887
R880
C883
C886
R881
C892
D875
ON
C888
C545
C581
D554
Q580
D563
C891
R553
R582
L882
Q873
Q876
R8054
R887
C898
L581A
L581
C582
C591
IC501
R598
L596
L598
C598
NP
R590
R899A
IC840
R897
C562
R585
R584
C584
C567
R573
RL561
C854
C866
C870
N601A
C855
R852
R842
R867
C861
Q856
Q854
C860
C853
C431
IC430
C433
C434
R434
R431
C436
R440
R432
C435
C432
R436
R435
R437
N10158
C871
F04
C835
D858
D904
R901
IC854
R883
R847
C904
R905
Q904
Q905
Q903
C901
C907
C863
D859
C862
Q860
Q858
C843
C865
R858
C868
C858
Q906
Q901
Q902
Q907
C903
N902
N901
D901
R902
R863
C851
C902
R903
C905
D902
D903
IC857
C859
C842
Q852
Q851
Q853
R898
C802
DIP
Q991
Q990
R999A
C993
Q992
Q993
C994
L950
D945
N991
R999
C992
R925
R935
Q920
Q921
Q922
Q923
C921
C929
C927
C942
C943
C944
F02
L893
C803
WARNING
N951
Q934
Q932
C949
C947
R959
R956
R957
Q935
Q931
Q950
Q946
D923
D928
D925
D926
R984
R982
D933
D938
D935
D936
D101A
LED
D101
ON


DIP
R545
C565
Q561
D541
C542
D540
T541
D543
R549
R548
R550
R568
Q563
Q565
Q567
R570
R571
C599
L599
R599
C541
D544
R538
C559
C564
C561
C560
C566
C551
C550
R551
L550
C563
C567
C568
L564
L563
L552
L551
L553
D550
N510
C553
C554
C552
C831
R572
R855
L865
D855
R854
L864
D854
D856
R856
D853
L866
L863
C857
C856
C855
C824
C830
R831
R840
R834
C822
R8050
R8051
R8052
R8053
R8056
CL1
D821
C832
R817
C833
C815
C828
C829
L820
D857
D851
C816
L861
R857
R850
L860
D850
C836
C821
R821
C826
C834
T801
R822
C852
PC830
R827
R826
Q820
C820
R813
PC831
R8016
C869
C894
C859
R8014
R8015
R853
CHASSIS NO.
GV3
TNPH0024 5
C805
R811
R812
L802
D801
N802A
WARNING
HEATSINK IS
NOT EARTHGROUNDED.
TO PREVENT RISK OF
ELECTRIC SHOCK, TEST
BEFORE TOUCHING.
L804
C801
L801
D800
C807
L807
FS804
J801
FS802
N801
T4.0AH 250V
R801
FS803
FS801
F01
NG : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE,
REPLACE ONLY WITH SAME TYPE AND RATINGS OF FUSE.
D132
D133
SW102
SW103
CHASSIS NO.
GV3
SW104
SW105
N3
TNPH0024Y 5
N102A

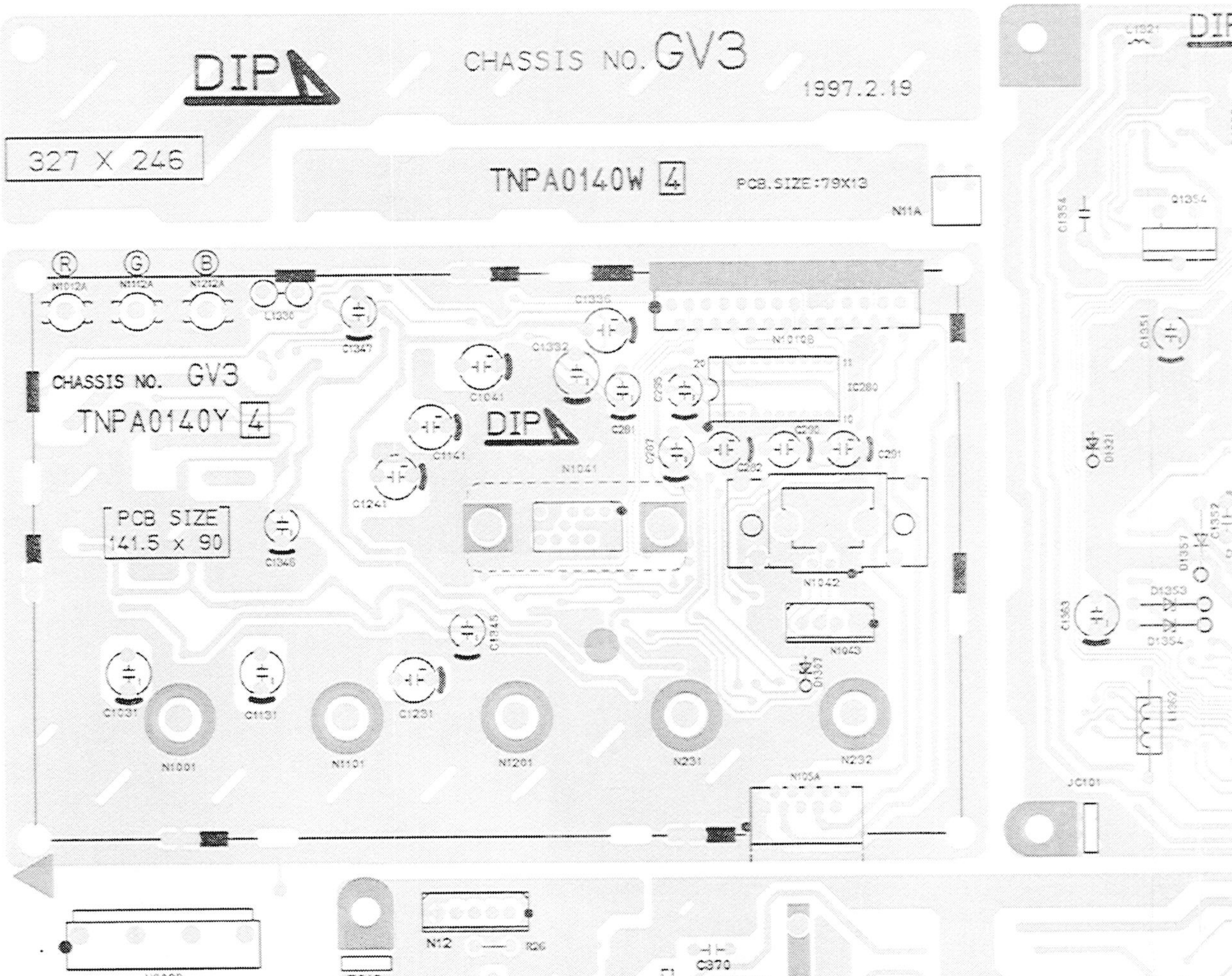
OARD (Solder side)

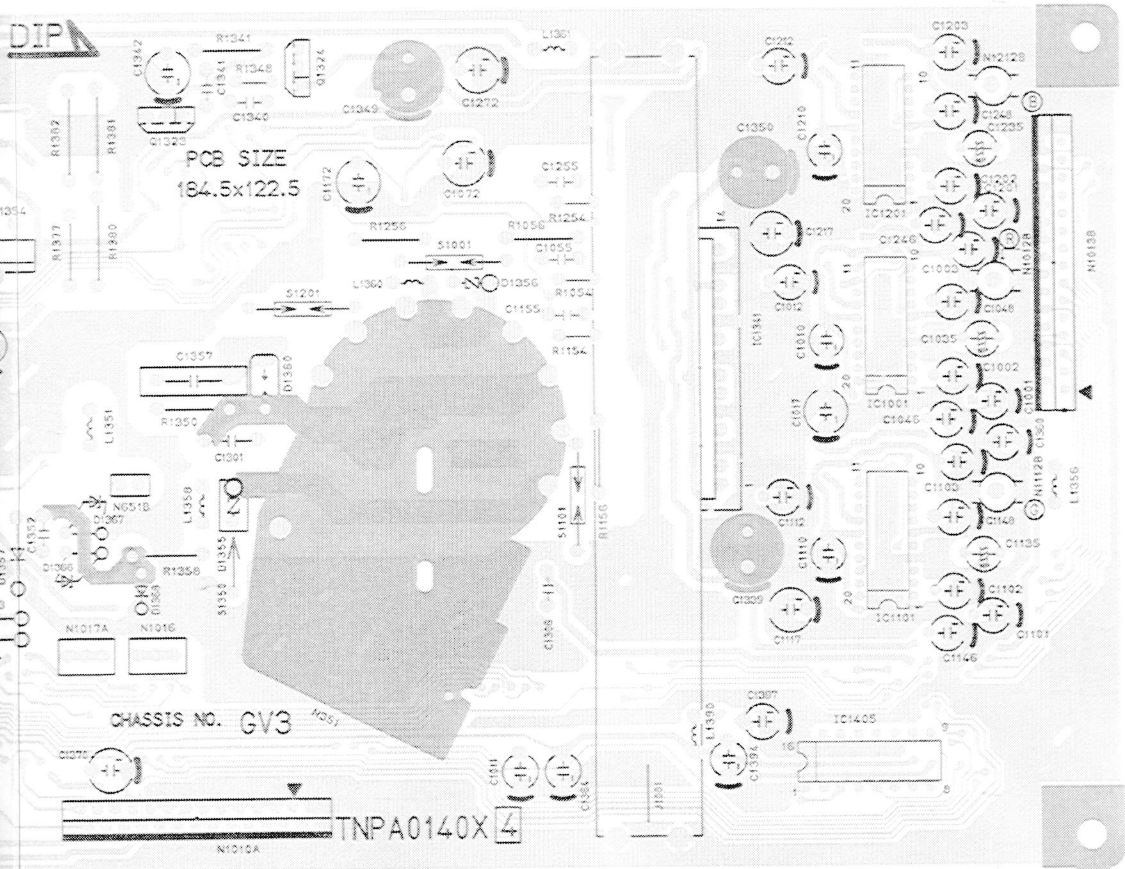


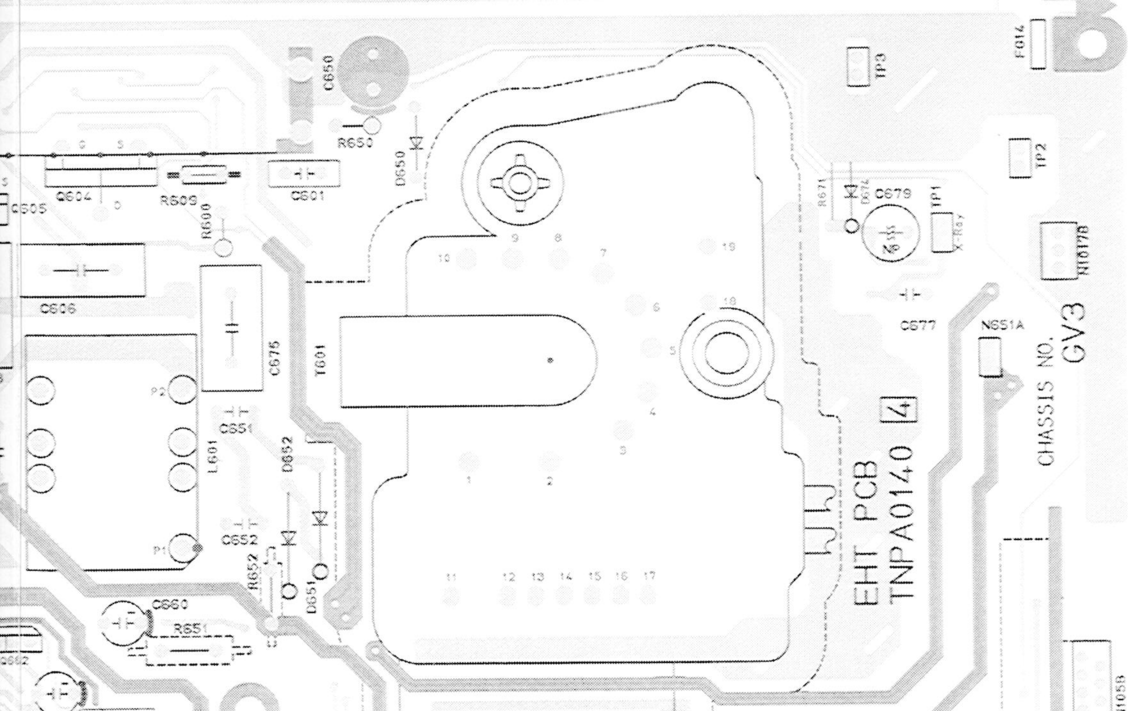
N351
KR
KB
KG
G1
G2
LOT NO.
N1010A
T601
LG01
P1
P2
LOT NO.
CHASSIS NO. GV3
N169
F014
F013
TP1
TP2
TP3
J304
J301


B
G
R
N1212A
N1112A
N1012A
CHASSIS NO.
GV3
LOT NO.
N1013B
C1321
IC280
R251
N1041
N1042
N1043
N1014A
J1
J2
J3
N1201
N1101
N1001
N201
N231
N202
IC1331
IC101
L1321
R1356
R1357
R1366
R1130
R1131
R1233
R1232
R1034
C1039
C1034
C1241
C1231
C1233
L1330
N12
R20
R19
FG12
N8029
LOT NO.
P2
P1
N1
SW801
R605
C602
R606
Q605
Q350
Q351
C366
C370
C371
C350
R328
R379
R356
C364
R369 R368 R377
C356
C359
T350
IC302
C363 C353
R351 R356
R373
C362
C360
R376
R365
R364
R370
C358
C361
C357
C355
R366
C352
D352
D351
R672
R360
R359
C354
R361
R681
R682
R683
R684
R362
R688
R363
D673
L673
D672
Q673
R670
R675
R674
C671
Q671
C672
C673
C685
R677
R676
Q676
Q675
IC601
R611
R612
R610
N601B
C681
C682
R692
Q672
N128
D602
D603
FG11
C603
C604
C605
Q15
Q11
Q12
Q13
Q14
Q16
R16
C16
C14
C12
C17
R11
R23
R26
D13
S672
R375
C365
C355

HT BOARD (Parts side)


DIP
CHASSIS NO. GV3
1997.2.19
327 X 246
TNPA0140W 4
PCB.SIZE:79X13
N11A
CHASSIS NO. GV3
TNPA0140Y 4
PCB SIZE
141.5 x 90
R
G
B
L1330
C1347
C1336
N1019B
C1041
C1332
C281
C285
IC280
C1141
DIP
C1241
N1041
C287
C282
C290
C291
C1348
N1342
N1043
C1345
D1397
C1031
C1131
C1231
N1001
N1101
N1201
N231
N232
N105A
L1321
DIP
C1354
Q1354
C1351
D1321
C1352
D1357
D1353
D1354
C1363
L1362
JC101
N6029
CHASSIS NO. GV3
AC SW BOARD
SW801
TNPA0140Z 4
N12
R26
FG12
R16
DIP
R15
Q16
C370
R350
C350
Q351
Q350
C366
C605
C604
C607
C356
C367
T350
R375
S672
R365
R364
Q352
C603
R360
R359
C354
R361
Q662
C604
L631
N6018
N1028
D633
FG11
R670
C671
D6
C673
Q673
D672
Q674


DIP
PCB SIZE
184.5x122.5
CHASSIS NO. GV3
TNPA0140X 4
N1010A
IC1201
IC1001
IC1101
IC1351
IC1405
N1013B
C1350
C1339
C1349
R1156
S1101
S1001
S1201
N1017A
N1016
N6518
C1370


EHT PCB
TNPA0140 4
CHASSIS NO.
GV3
T601
L601
C650
C675
C676
C680
C684
Q604
R609
R650
R651
R652
R671
D650
D651
D652
C601
C606
C651
C652
C660
C677
C679
L671
N2
N651A
N1017B
N1058
TP1
TP2
TP3
F613
F614

IMPORTANT SAFETY NOTICE

The component identified by shading or international symbol Y on the following schematic diagrams incorporate sp
features important for protection from X-Radiation, fire and electrical shock hazards. When servicing it is essentia
only manufacturer's specified parts be used for those critical components.

NOTES :

1. RESISTOR

All resistors are carbon 1/4W resistor, unless otherwise noted by the following marks.
Unit of resistance is ohm (Ω). (K = 1,000 M = 1,000,000)

○ : Non Flammable
☒ : Metal Oxide
□ : Wire Wound
⊗ : Fusible
⧄ : Flame Proof Rectangular

△ : Solid
◎ : Metal (Precision and high stability)
▬ : Thermistor
⊟ : Positive coefficient Thermistor

2. CAPACITOR

All capacitors are ceramic 50V capacitor, unless otherwise noted by the following marks.
Unit of capacitance is µF, unless otherwise noted.

○ : Electrolytic
☒ : Tantalum
□ : Bipolar
⊗ : Polystyrene
⧄ : Temperature Compensation

Ⓜ Polyester
⊖ : Metalized Polyester
☒ : Polypropylene
△ Mica
○ : Ceramic
ⓒ : Ceramic (SL)

3. COIL

Unit of inductance is µH unless otherwise noted.

4. VOLTAGE MEASUREMENT

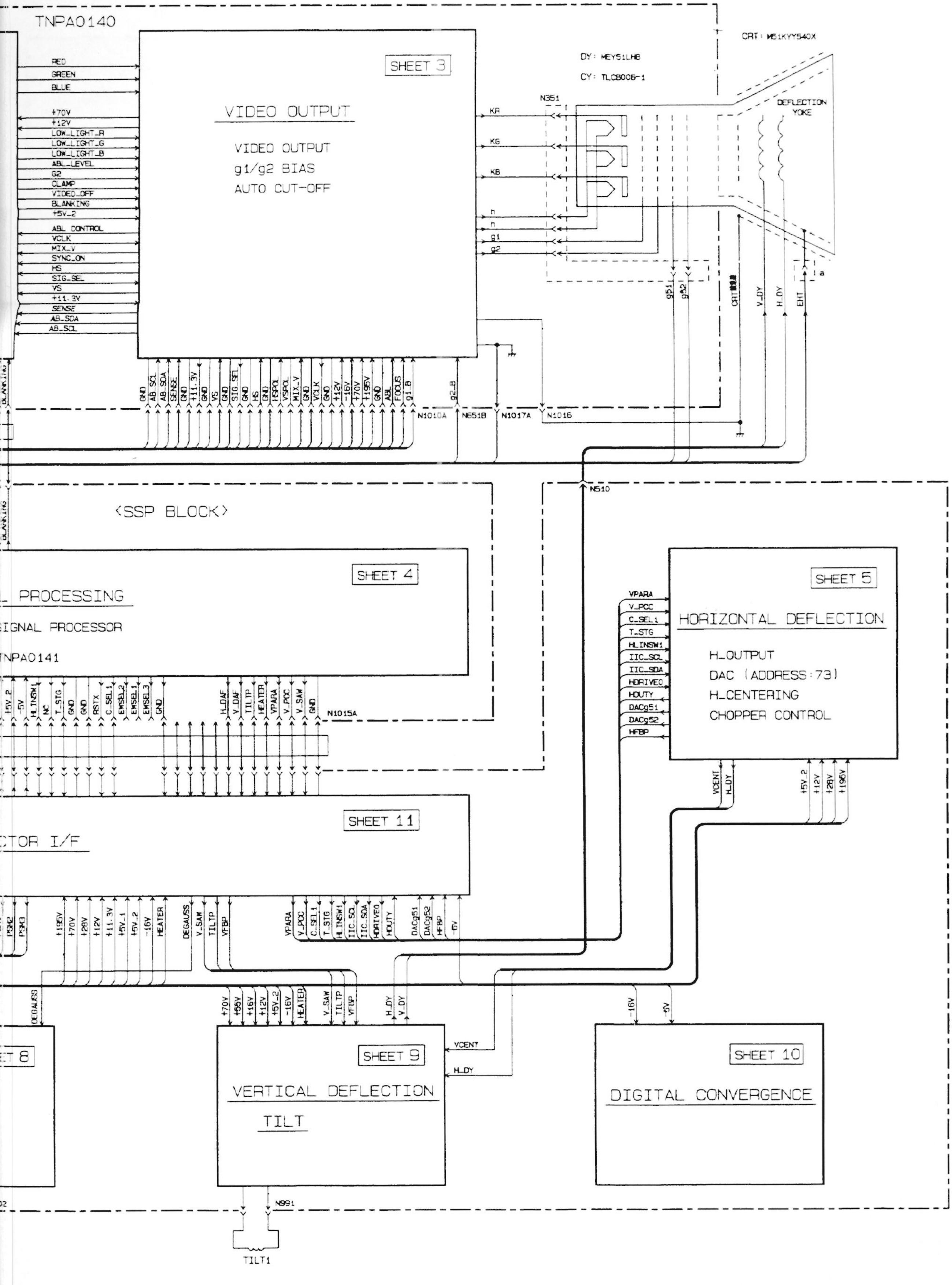
Voltage is measured by a digital meter receiving normal signal.

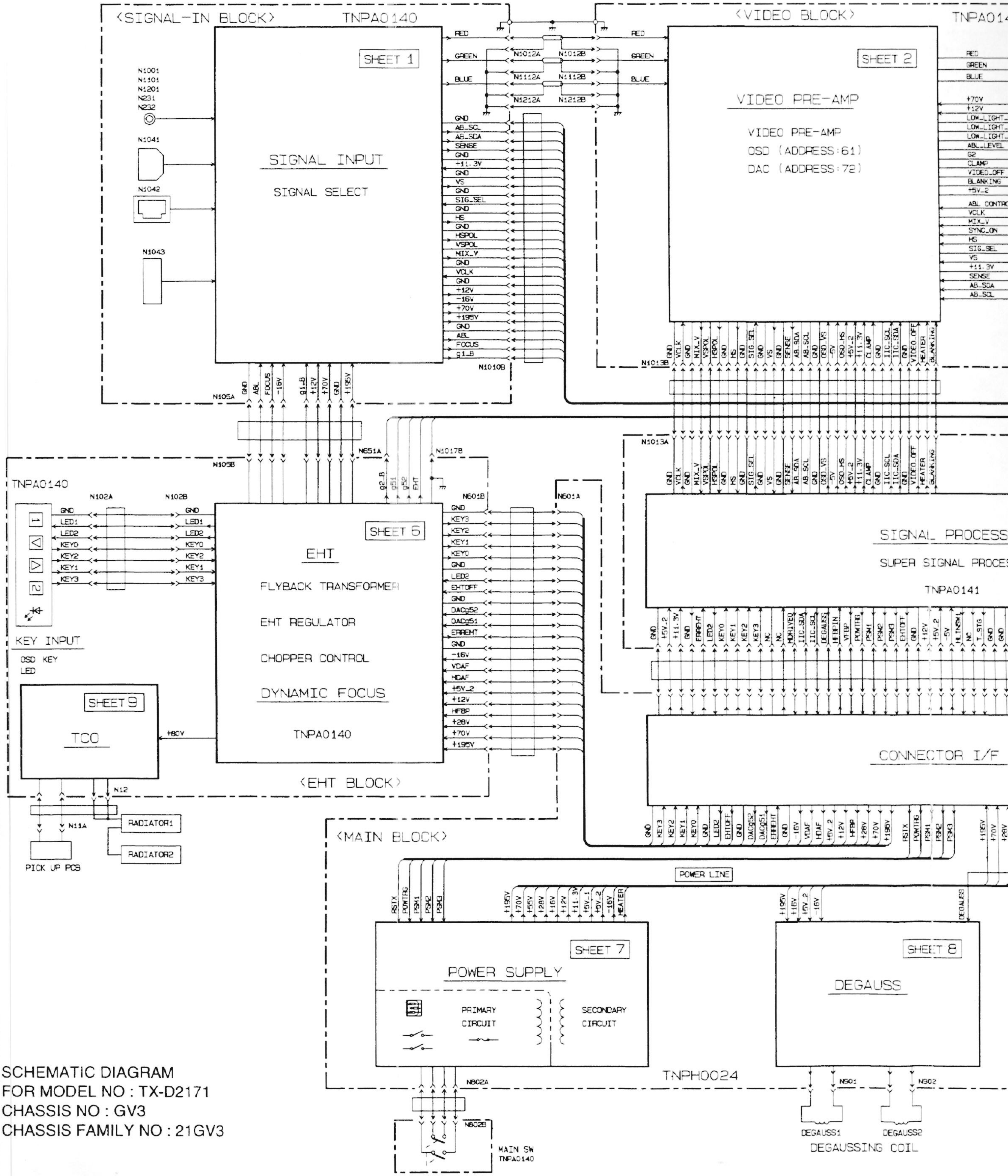
5. This schematic diagram is the latest at the time of printing and is subject to change without notice.

SERVICE NOTES :

This model has a section that does not share a common ground with the power supply section. The different secti
referred to as the HOT section and the COLD section in the precautions below.

1. Do not touch the HOT section and the COLD section at the same time. You may receive an electric shock.
2. Do not short the HOT section to the COLD section. This could blow the fuse or damage parts.
3. Never measure the HOT section and the COLD section at the same time when using tools such as oscillosco
   multi-meters.
4. Always unplug the unit before beginning any operation such as removing the chassis.

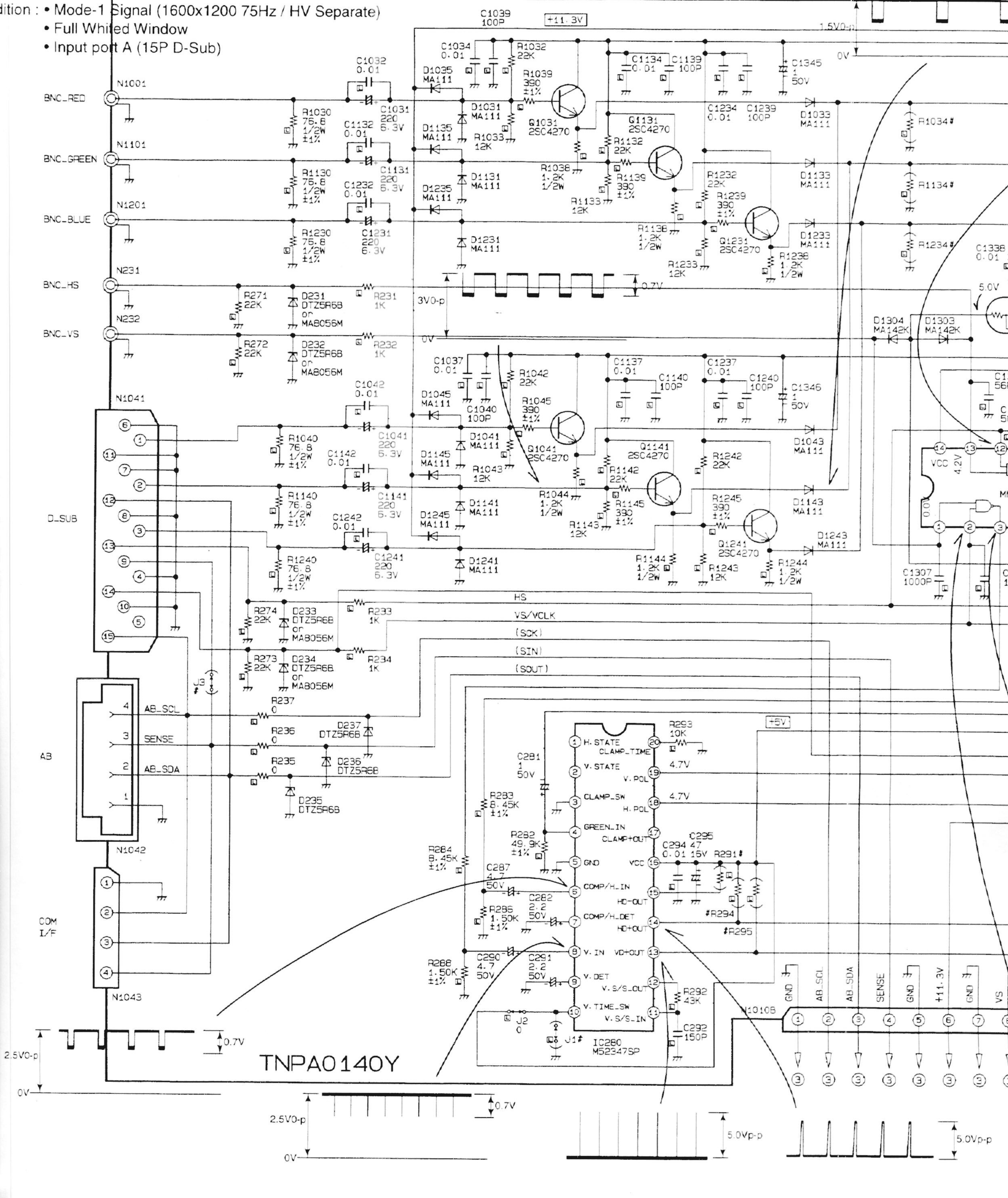

TNPA0140
SHEET 3
VIDEO OUTPUT
VIDEO OUTPUT
g1/g2 BIAS
AUTO CUT-OFF
RED
GREEN
BLUE
+70V
+12V
LOW_LIGHT_R
LOW_LIGHT_G
LOW_LIGHT_B
ABL_LEVEL
G2
CLAMP
VIDEO_OFF
BLANKING
+5V_2
ABL CONTROL
VCLK
MIX_V
SYNC_ON
HS
SIG_SEL
VS
+11.3V
SENSE
AB_SDA
AB_SCL
GND
AB SCL
AB SDA
SENSE
GND
+11.3V
GND
VS
GND
SIG SEL
GND
HS
GND
HSPOL
VSPOL
MIX_V
GND
VCLK
GND
+12V
-16V
+70V
+195V
GND
ABL
FOCUS
g1 B
g2_B
N1010A
N651B
N1017A
N1016
CRT: M51KYY540X
DY: MEY51LH8
CY: TLC8006-1
N351
KR
KG
KB
h
h
g1
g2
DEFLECTION YOKE
a
g51
g52
CRT
V_DY
H_DY
EHT
N510
BLANKING
<SSP BLOCK>
SHEET 4
L PROCESSING
SIGNAL PROCESSOR
TNPA0141
+5V_2
-5V
H_INSW1
NC
T_STG
GND
GND
RSTX
C_SEL1
EWSEL2
EWSEL1
EWSEL3
GND
H_DAF
V_DAF
TILTP
HEATER
VPARA
V_PCC
V_SAW
GND
N1015A
SHEET 11
CTOR I/F
PGH2
PGH3
+195V
+70V
+28V
+12V
+11.3V
+5V_1
+5V_2
-16V
HEATER
DEGAUSS
V_SAW
TILTP
VFBP
VPARA
V_PCC
C_SEL1
T_STG
H_INSW1
IIC_SCL
IIC_SDA
HDRIVEO
HOUTY
DACg51
DACg52
HFBP
-5V
SHEET 5
HORIZONTAL DEFLECTION
H_OUTPUT
DAC (ADDRESS:73)
H_CENTERING
CHOPPER CONTROL
VPARA
V_PCC
C_SEL1
T_STG
H_INSW1
IIC_SCL
IIC_SDA
HDRIVEO
HOUTY
DACg51
DACg52
HFBP
VCENT
H_DY
+5V_2
+12V
+28V
+195V
DEGAUSS
ET 8
+70V
+55V
+16V
+12V
+5V_2
-16V
HEATER
V_SAW
TILTP
VFBP
H_DY
V_DY
SHEET 9
VERTICAL DEFLECTION
TILT
VCENT
H_DY
-16V
-5V
SHEET 10
DIGITAL CONVERGENCE
02
N991
TILT1

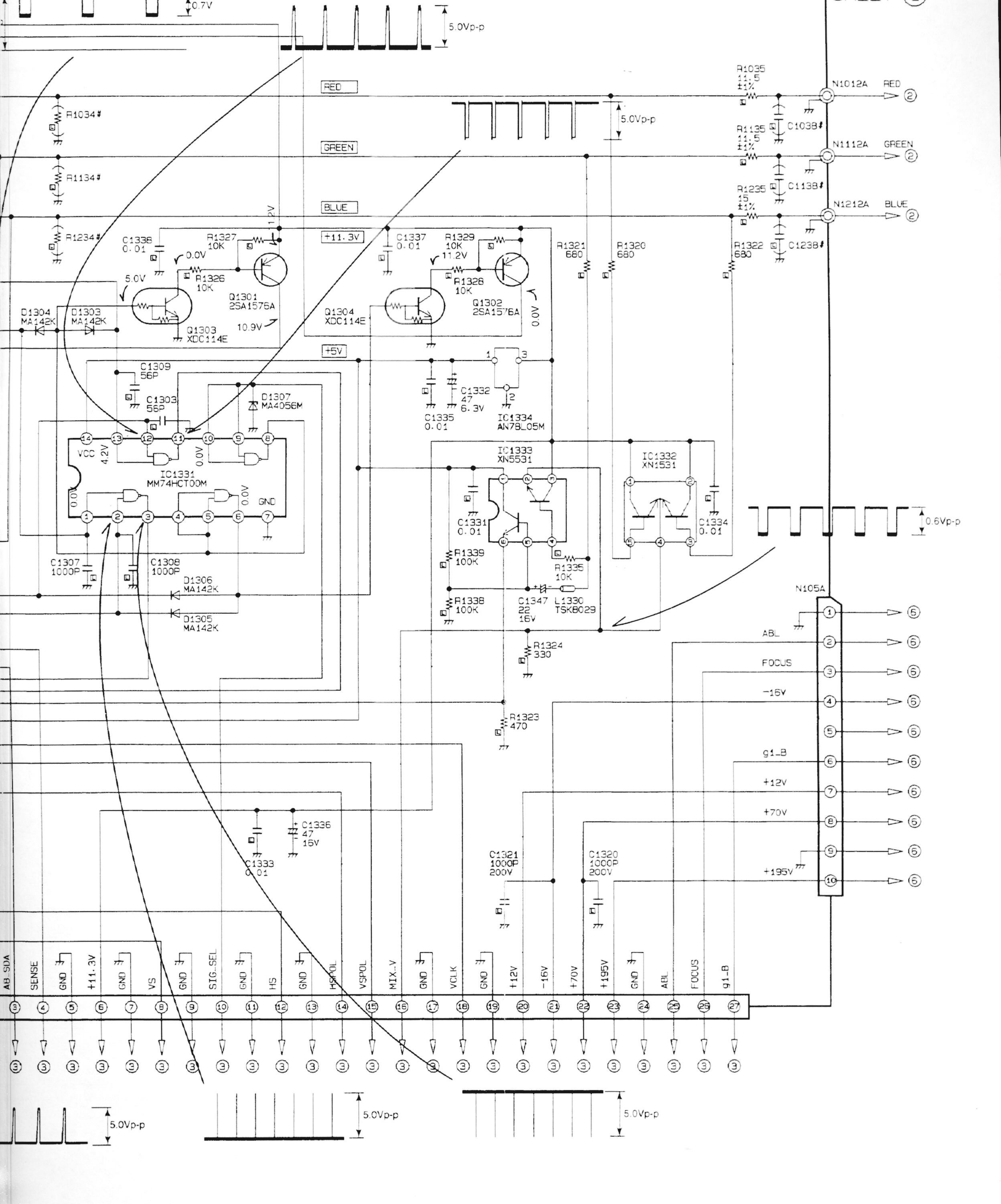


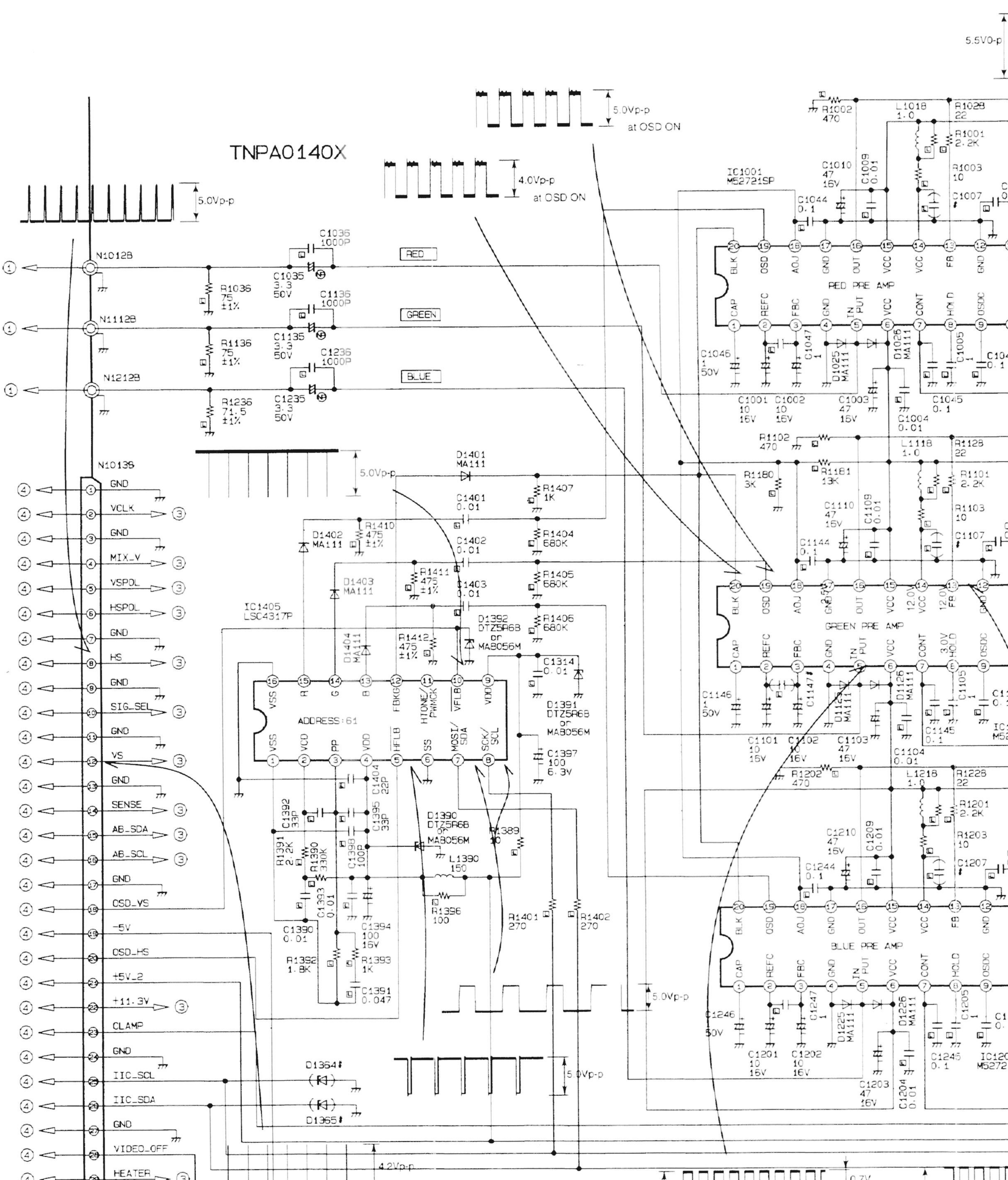
<SIGNAL-IN BLOCK>
TNPA0140
SHEET 1
SIGNAL INPUT
SIGNAL SELECT
N1001
N1101
N1201
N231
N232
N1041
N1042
N1043
RED
GREEN
BLUE
N1012A
N1012B
N1112A
N1112B
N1212A
N1212B
GND
AB_SCL
AB_SDA
SENSE
+11.3V
VS
SIG_SEL
HS
HSPOL
VSPOL
MIX_V
VCLK
+12V
-16V
+70V
+195V
ABL
FOCUS
g1_B
N1010B
N105A
N105B
<VIDEO BLOCK>
SHEET 2
VIDEO PRE-AMP
VIDEO PRE-AMP
OSD (ADDRESS:61)
DAC (ADDRESS:72)
LOW_LIGHT_
ABL_LEVEL
G2
CLAMP
VIDEO_OFF
BLANKING
+5V_2
ABL CONTRO
SYNC_ON
N1013B
N1013A
OSD_VS
OSD_HS
-5V
IIC_SCL
IIC_SDA
HEATER
TNPA0140
N102A
N102B
LED1
LED2
KEY0
KEY1
KEY2
KEY3
KEY INPUT
OSD KEY
LED
SHEET 9
TCO
+80V
N12
N11A
RADIATOR1
RADIATOR2
PICK UP PCB
N651A
N1017B
g2_B
g51
g52
EHT
N601B
N601A
SHEET 6
EHT
FLYBACK TRANSFORMER
EHT REGULATOR
CHOPPER CONTROL
DYNAMIC FOCUS
TNPA0140
<EHT BLOCK>
EHTOFF
DACg52
DACg51
ERREHT
VDAF
HDAF
HFBP
+28V
SIGNAL PROCESS
SUPER SIGNAL PROCES
TNPA0141
HORIVEQ
DEGAUSS
HFBPIN
VFBP
POWTRG
PSM1
PSM2
PSM3
HLINSW
NC
T_STG
CONNECTOR I/F
RSTX
<MAIN BLOCK>
POWER LINE
+55V
+5V_1
SHEET 7
POWER SUPPLY
PRIMARY CIRCUIT
SECONDARY CIRCUIT
TNPH0024
N802A
N802B
MAIN SW
TNPA0140
SHEET 8
DEGAUSS
N901
N902
DEGAUSS1
DEGAUSS2
DEGAUSSING COIL

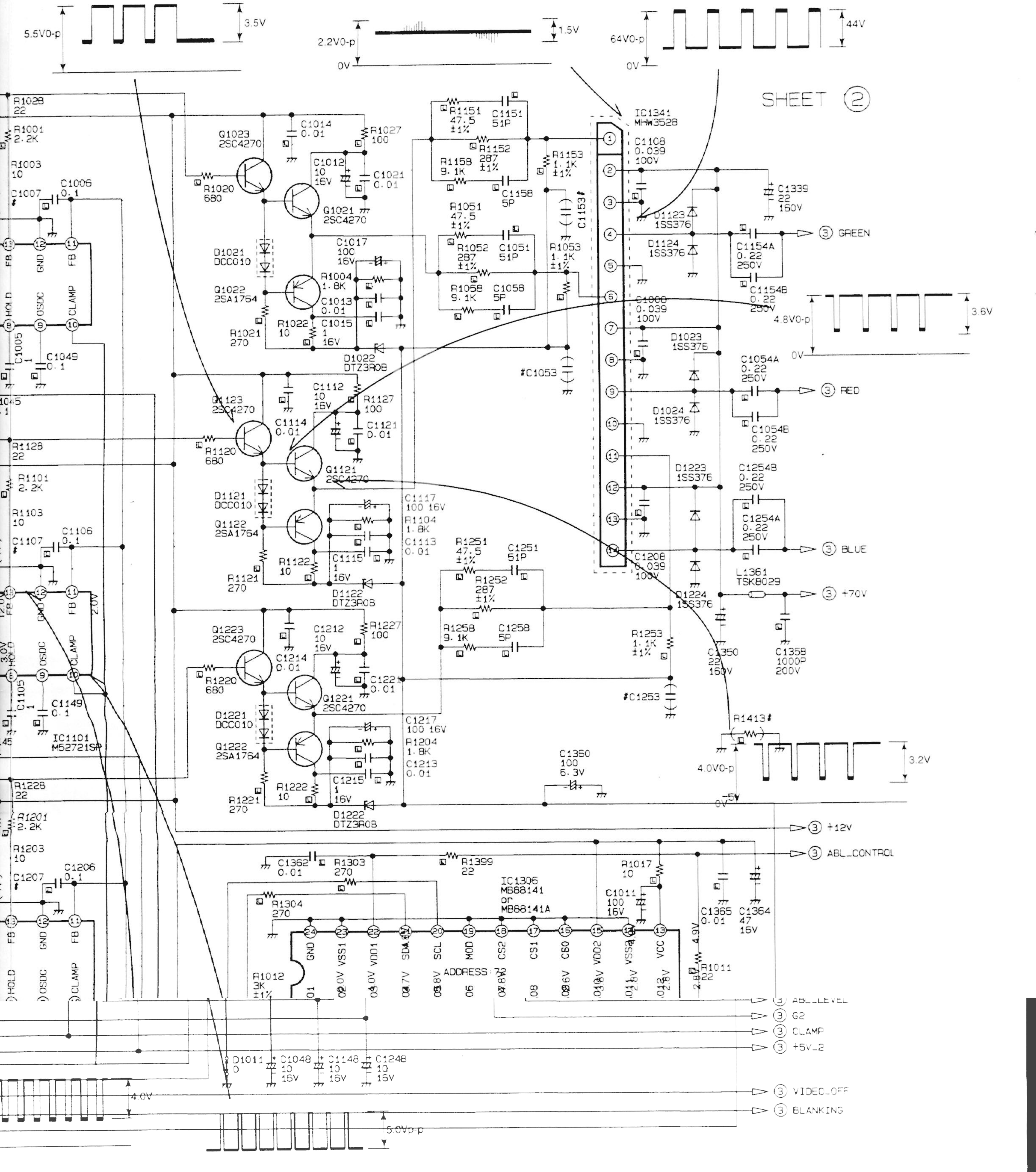
SCHEMATIC DIAGRAM
FOR MODEL NO : TX-D2171
CHASSIS NO : GV3
CHASSIS FAMILY NO : 21GV3

dition : • Mode-1 Signal (1600x1200 75Hz / HV Separate)
• Full Whited Window
• Input port A (15P D-Sub)

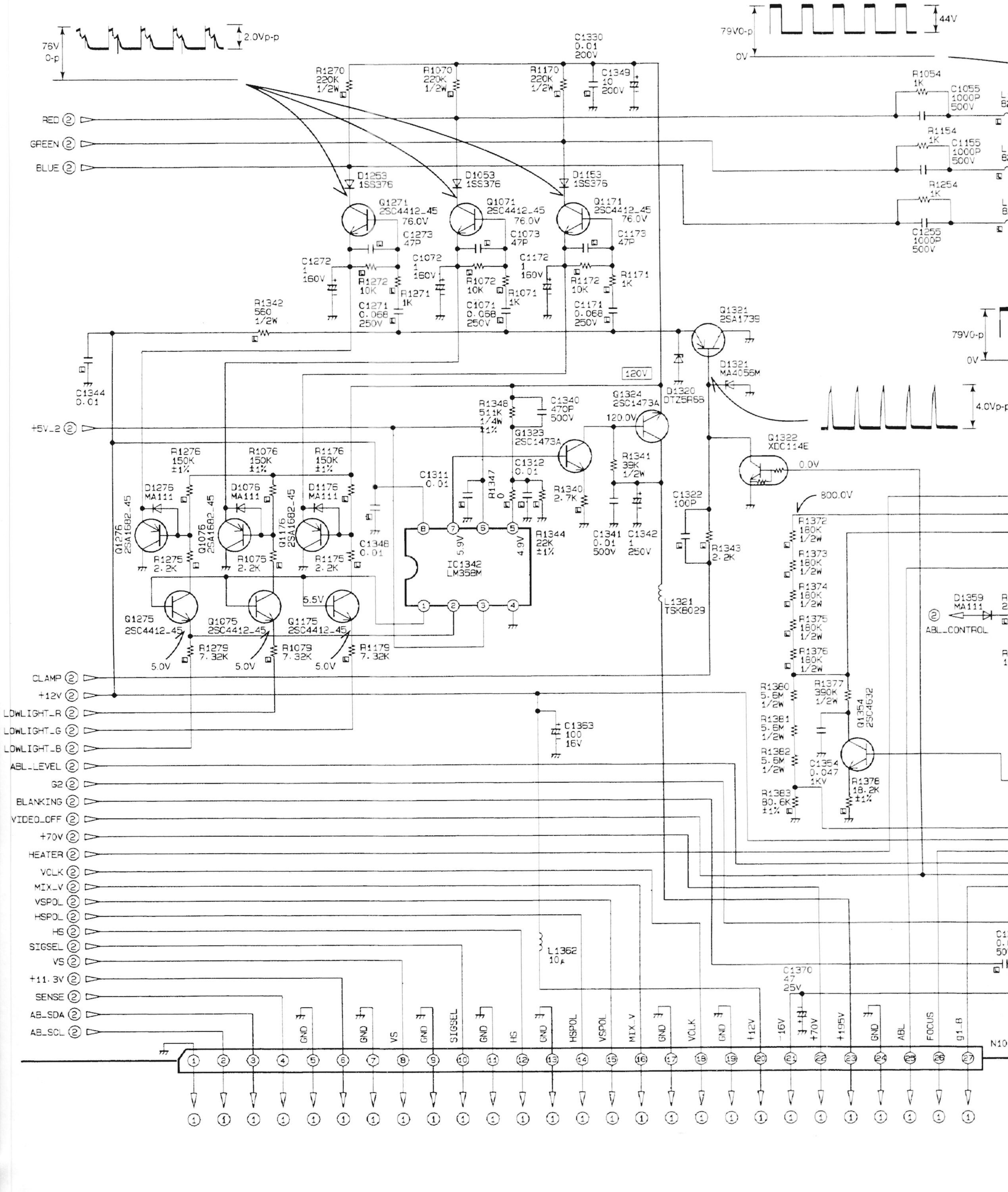

N1001
BNC_RED
N1101
BNC_GREEN
N1201
BNC_BLUE
N231
BNC_HS
N232
BNC_VS
N1041
D_SUB
AB
N1042
COM I/F
N1043
AB_SCL
SENSE
AB_SDA
J3
C1039 100P
+11.3V
1.5V0-p
0V
C1034 0.01
R1032 22K
C1134 0.01
C1139 100P
C1345 1 50V
C1032 0.01
D1035 MA111
R1039 390 ±1%
C1031 220 6.3V
D1031 MA111
Q1031 2SC4270
R1030 76.8 1/2W ±1%
C1132 0.01
D1135 MA111
R1033 12K
Q1131 2SC4270
C1234 0.01
C1239 100P
D1033 MA111
R1034#
R1132 22K
R1038 1.2K 1/2W
R1139 390 ±1%
R1133 12K
R1130 76.8 1/2W ±1%
C1131 220 6.3V
C1232 0.01
D1131 MA111
D1235 MA111
R1232 22K
R1239 390 ±1%
D1133 MA111
R1134#
R1138 1.2K 1/2W
Q1231 2SC4270
R1230 76.8 1/2W ±1%
C1231 220 6.3V
D1231 MA111
R1233 12K
R1238 1.2K 1/2W
D1233 MA111
R1234#
C1338 0.01
R271 22K
D231 DTZ5R6B or MA8056M
R231 1K
3V0-p
0.7V
5.0V
R272 22K
D232 DTZ5R6B or MA8056M
R232 1K
D1304 MA142K
D1303 MA142K
C1037 0.01
R1042 22K
C1137 0.01
C1140 100P
C1237 0.01
C1240 100P
C1346 1 50V
C1042 0.01
D1045 MA111
C1040 100P
R1045 390 ±1%
R1040 76.8 1/2W ±1%
C1041 220 6.3V
D1041 MA111
Q1041 2SC4270
Q1141 2SC4270
D1043 MA111
R1242 22K
C1142 0.01
D1145 MA111
R1043 12K
R1142 22K
R1044 1.2K 1/2W
R1145 390 ±1%
R1245 390 ±1%
D1143 MA111
R1140 76.8 1/2W ±1%
C1141 220 6.3V
D1141 MA111
R1143 12K
C1242 0.01
D1245 MA111
Q1241 2SC4270
D1243 MA111
R1240 76.8 1/2W ±1%
C1241 220 6.3V
D1241 MA111
R1144 1.2K 1/2W
R1243 12K
R1244 1.2K 1/2W
C1307 1000P
VCC
4.2V
HS
VS/VCLK
(SCK)
(SIN)
(SOUT)
R274 22K
D233 DTZ5R6B or MA8056M
R233 1K
R273 22K
D234 DTZ5R6B or MA8056M
R234 1K
R237 0
R236 0
D237 DTZ5R6B
R235 0
D236 DTZ5R6B
D235 DTZ5R6B
+5V
R293 10K
C281 1 50V
R283 8.45K ±1%
R282 49.9K ±1%
R284 8.45K ±1%
C287 4.7 50V
C282 2.2 50V
R286 1.50K ±1%
R288 1.50K ±1%
C290 4.7 50V
C291 2.2 50V
J2 0
J1#
H. STATE
CLAMP_TIME
V. STATE
V. POL
CLAMP_SW
H. POL
GREEN_IN
CLAMP+OUT
GND
VCC
COMP/H_IN
HD-OUT
COMP/H_DET
HD+OUT
V. IN
VD+OUT
V. DET
V. S/S_OUT
V. TIME_SW
V. S/S_IN
4.7V
4.7V
C294 0.01
C295 47 16V
R291#
#R294
#R295
R292 43K
C292 150P
IC280 M52347SP
N1010B
GND
AB_SCL
AB_SDA
SENSE
GND
+11.3V
GND
VS
TNPA0140Y
2.5V0-p
0.7V
0V
2.5V0-p
0.7V
0V
5.0Vp-p
5.0Vp-p


0.7V
5.0Vp-p
RED
GREEN
BLUE
R1034#
R1134#
R1234#
R1035
11.5
±1%
R1135
11.5
±1%
R1235
15
±1%
C1038#
C1138#
C1238#
N1012A
RED
N1112A
GREEN
N1212A
BLUE
②
5.0Vp-p
+11.3V
C1336
0.01
R1327
10K
12V
0.0V
R1326
10K
5.0V
Q1301
2SA1576A
Q1303
XDC114E
10.9V
D1304
MA142K
D1303
MA142K
C1337
0.01
R1329
10K
11.2V
R1328
10K
Q1304
XDC114E
Q1302
2SA1576A
0.0V
R1321
680
R1320
680
R1322
680
+5V
C1309
56P
C1303
56P
D1307
MA4056M
C1332
47
6.3V
C1335
0.01
IC1334
AN78L05M
VCC
4.2V
IC1331
MM74HCT00M
0.0V
GND
C1307
1000P
C1308
1000P
D1306
MA142K
D1305
MA142K
IC1333
XN5531
IC1332
XN1531
C1331
0.01
C1334
0.01
R1339
100K
R1335
10K
R1338
100K
C1347
22
16V
L1330
TSK8029
R1324
330
R1323
470
0.6Vp-p
N105A
ABL
FOCUS
−16V
g1_B
+12V
+70V
+195V
⑥
C1321
1000P
200V
C1320
1000P
200V
C1336
47
16V
C1333
0.01
AB SDA
SENSE
GND
+11.3V
GND
VS
GND
SIG_SEL
GND
HS
GND
HSPOL
VSPOL
MIX_V
GND
VCLK
GND
+12V
−16V
+70V
+195V
GND
ABL
FOCUS
g1_B
③
5.0Vp-p
5.0Vp-p
5.0Vp-p

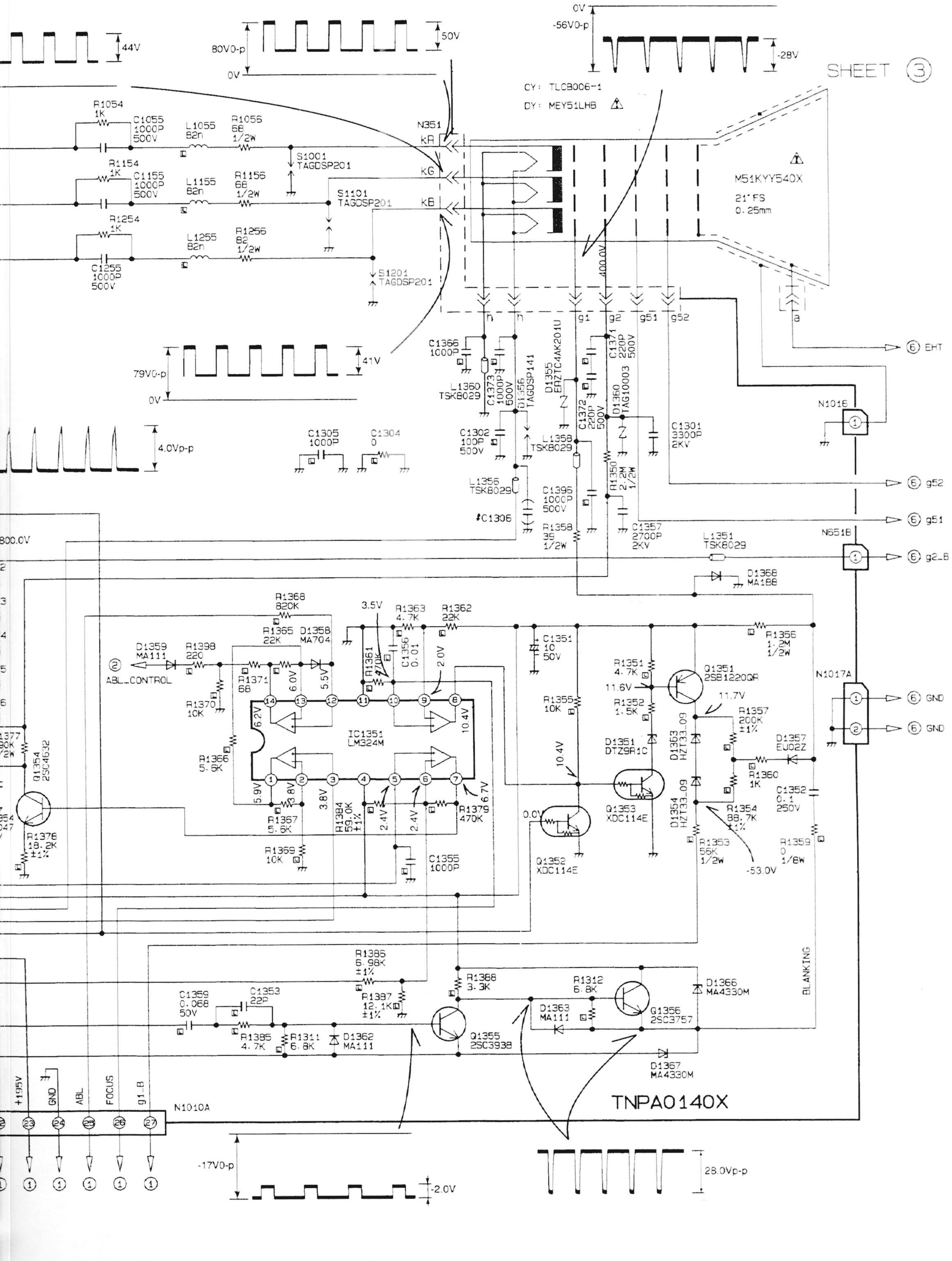

TNPA0140X
5.0Vp-p
5.0Vp-p at OSD ON
4.0Vp-p at OSD ON
5.5V0-p
N1012B
N1112B
N1212B
N1013B
C1036 1000P
C1035 3.3 50V
R1036 75 ±1%
C1136 1000P
C1135 3.3 50V
R1136 75 ±1%
C1236 1000P
C1235 3.3 50V
R1236 71.5 ±1%
RED
GREEN
BLUE
IC1001 M52721SP
RED PRE AMP
GREEN PRE AMP
BLUE PRE AMP
BLK
OSD
ADJ
GND
OUT
VCC
FB
CAP
REFC
FBC
IN PUT
CONT
HOLD
OSDC
R1002 470
L1018 1.0
R1028 22
R1001 2.2K
R1003 10
C1007
C1010 47 16V
C1009 0.01
C1044 0.1
C1046 1 50V
C1047 1
D1025 MA111
D1026 MA111
C1005 1
C1001 10 16V
C1002 10 16V
C1003 47 16V
C1004 0.01
C1045 0.1
R1102 470
L1118 1.0
R1128 22
R1101 2.2K
R1103 10
C1107
R1180 3K
R1181 13K
C1110 47 16V
C1109 0.01
C1144 0.1
C1146 1 50V
C1147
D1125 MA111
D1126 MA111
C1105 1
C1101 10 16V
C1102 10 16V
C1103 47 16V
C1104 0.01
C1145 0.1
12.0V
3.0V
2.5V
R1202 470
L1218 1.0
R1228 22
R1201 2.2K
R1203 10
C1207
C1210 47 16V
C1209 0.01
C1244 0.1
C1246 50V
C1247 1
D1225 MA111
D1226 MA111
C1205 1
C1201 10 16V
C1202 10 16V
C1203 47 16V
C1204 0.01
C1245 0.1
IC1201 M5272
D1401 MA111
R1407 1K
C1401 0.01
R1410 475 ±1%
D1402 MA111
C1402 0.01
R1404 680K
R1411 475 ±1%
D1403 MA111
C1403 0.01
R1405 680K
IC1405 LSC4317P
D1404 MA111
R1412 475 ±1%
D1392 DTZ5R6B or MA8056M
R1406 680K
C1314 0.01
D1391 DTZ5R6B or MA8056M
C1397 100 6.3V
VSS
R
G
B
FBKG
HTONE/ PWMCK
VFLB
VDD
ADDRESS:61
VCO
PP
HFLB
SS
MOSI/ SDA
SCK/ SCL
C1392 33P
C1404 22P
C1395 33P
R1391 2.2K
R1390 330K
C1398 100P
D1390 DTZ5R6B or MA8056M
R1389 10
L1390 150
R1396 100
C1393 0.01
C1390 0.01
C1394 100 16V
R1392 1.8K
R1393 1K
C1391 0.047
R1401 270
R1402 270
D1364
D1365
4.2Vp-p
0.7V
3V0-p
6V0-p
0V
GND
VCLK
MIX_V
VSPOL
HSPOL
HS
SIG_SEL
VS
SENSE
AB_SDA
AB_SCL
OSD_VS
-5V
OSD_HS
+5V_2
+11.3V
CLAMP
IIC_SCL
IIC_SDA
VIDEO_OFF
HEATER
BLANKING
①
③
④


5.5V0-p
3.5V
2.2V0-p
1.5V
0V
64V0-p
44V
0V
SHEET ②
R1028 22
R1001 2.2K
R1003 10
C1007
C1006 0.1
Q1023 2SC4270
C1014 0.01
R1027 100
R1020 680
C1012 10 16V
C1021 0.01
Q1021 2SC4270
D1021 DCC010
C1017 100 16V
Q1022 2SA1764
R1004 1.8K
C1013 0.01
R1021 270
R1022 10
C1015 1 16V
D1022 DTZ3R0B
R1151 47.5 ±1%
C1151 51P
R1152 287 ±1%
R1158 9.1K
C1158 5P
R1153 1.1K ±1%
C1153#
R1051 47.5 ±1%
R1052 287 ±1%
C1051 51P
R1053 1.1K ±1%
R1058 9.1K
C1058 5P
#C1053
IC1341 MHW3528
C1108 0.039 100V
C1339 22 160V
D1123 1SS376
D1124 1SS376
C1154A 0.22 250V
C1154B 0.22 250V
③ GREEN
C1008 0.039 100V
4.8V0-p
3.6V
0V
D1023 1SS376
C1054A 0.22 250V
③ RED
D1024 1SS376
C1054B 0.22 250V
D1223 1SS376
C1254B 0.22 250V
C1254A 0.22 250V
③ BLUE
C1208 0.039 100V
D1224 1SS376
L1361 TSK8029
③ +70V
C1350 22 160V
C1358 1000P 200V
FB GND FB
HOLD OSDC CLAMP
C1005 1
C1049 0.1
1045 1
Q1123 2SC4270
C1112 10 16V
R1127 100
C1114 0.01
C1121 0.01
R1128 22
R1120 680
Q1121 2SC4270
R1101 2.2K
D1121 DCC010
C1117 100 16V
R1104 1.8K
C1113 0.01
R1103 10
Q1122 2SA1764
C1107
C1106 0.1
R1122 10
C1115 1 16V
R1121 270
D1122 DTZ3R0B
R1251 47.5 ±1%
C1251 51P
R1252 287 ±1%
R1258 9.1K
C1258 5P
R1253 1.1K ±1%
#C1253
2.0V
3.0V
Q1223 2SC4270
C1212 10 16V
R1227 100
R1220 680
C1214 0.01
C1221 0.01
Q1221 2SC4270
C1105 1
C1149 0.1
D1221 DCC010
C1217 100 16V
R1204 1.8K
C1213 0.01
IC1101 M52721SP
Q1222 2SA1764
R1222 10
C1215 1 16V
R1221 270
D1222 DTZ3R0B
R1228 22
R1201 2.2K
R1203 10
C1207
C1206 0.1
R1413#
4.0V0-p
3.2V
0V
C1360 100 6.3V
③ +12V
③ ABL_CONTROL
C1362 0.01
R1303 270
R1399 22
R1304 270
IC1306 MB88141 or MB88141A
R1017 10
C1011 100 16V
C1365 0.01
C1364 47 16V
GND VSS1 VDD1 SDA SCL MOD CS2 CS1 CS0 VDD2 VSS2 VCC
ADDRESS:7C
4.9V
R1011 22
R1012 3K ±1%
0V 4.0V 4.7V 3.8V 2.8V 2.6V 3.8V 2.8V 2.8V 2.8V
01 02 03 04 05 06 07 08 09 010 011 012
③ ABL_LEVEL
③ G2
③ CLAMP
③ +5V_2
D1011 0
C1048 10 16V
C1148 10 16V
C1248 10 16V
4.0V
③ VIDEO_OFF
③ BLANKING
5.0Vp-p

]



76V 0-p
2.0Vp-p
79V0-p
44V
0V
C1330 0.01 200V
R1270 220K 1/2W
R1070 220K 1/2W
R1170 220K 1/2W
C1349 10 200V
R1054 1K
C1055 1000P 500V
R1154 1K
C1155 1000P 500V
R1254 1K
C1255 1000P 500V
RED ②
GREEN ②
BLUE ②
D1253 1SS376
D1053 1SS376
D1153 1SS376
Q1271 2SC4412_45 76.0V
Q1071 2SC4412_45 76.0V
Q1171 2SC4412_45 76.0V
C1273 47P
C1073 47P
C1173 47P
C1272 1 160V
C1072 1 160V
C1172 1 160V
R1272 10K
R1072 10K
R1172 10K
R1271 1K
R1071 1K
R1171 1K
C1271 0.068 250V
C1071 0.068 250V
C1171 0.068 250V
R1342 560 1/2W
Q1321 2SA1739
79V0-p
0V
C1344 0.01
120V
D1320 DTZ5R6B
D1321 MA4056M
4.0Vp-p
Q1324 2SC1473A
120.0V
R1348 511K 1/4W ±1%
C1340 470P 500V
Q1323 2SC1473A
+5V_2 ②
C1312 0.01
R1341 39K 1/2W
Q1322 XDC114E
0.0V
800.0V
R1276 150K ±1%
R1076 150K ±1%
R1176 150K ±1%
C1311 0.01
R1347 0
R1340 2.7K
C1341 0.01 500V
C1342 1 250V
C1322 100P
R1343 2.2K
D1276 MA111
D1076 MA111
D1176 MA111
Q1276 2SA1682_45
Q1076 2SA1682_45
Q1176 2SA1682_45
R1275 2.2K
R1075 2.2K
R1175 2.2K
C1348 0.01
IC1342 LM358M
5.9V
4.9V
R1344 22K ±1%
R1372 180K 1/2W
R1373 180K 1/2W
R1374 180K 1/2W
R1375 180K 1/2W
R1376 180K 1/2W
D1359 MA111
ABL_CONTROL
L1321 TSK6029
5.5V
Q1275 2SC4412_45
Q1075 2SC4412_45
Q1175 2SC4412_45
R1279 7.32K
R1079 7.32K
R1179 7.32K
5.0V
5.0V
5.0V
CLAMP ②
+12V ②
LOWLIGHT_R ②
LOWLIGHT_G ②
LOWLIGHT_B ②
ABL_LEVEL ②
G2 ②
BLANKING ②
VIDEO_OFF ②
+70V ②
HEATER ②
VCLK ②
MIX_V ②
VSPOL ②
HSPOL ②
HS ②
SIGSEL ②
VS ②
+11.3V ②
SENSE ②
AB_SDA ②
AB_SCL ②
C1363 100 16V
R1380 5.6M 1/2W
R1381 5.6M 1/2W
R1382 5.6M 1/2W
R1383 80.6K ±1%
R1377 390K 1/2W
Q1354 2SC4632
C1354 0.047 1KV
R1378 18.2K ±1%
L1362 10μ
C1370 47 25V
GND
GND
VS
GND
SIGSEL
GND
HS
GND
HSPOL
VSPOL
MIX_V
GND
VCLK
GND
+12V
-16V
+70V
+195V
GND
ABL
FOCUS
g1_B
N10
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗


SHEET ③
CY: TLC8006-1
DY: MEY51LHB ⚠
M51KYY540X
21" FS
0.25mm
⚠
44V
80V0-p
0V
50V
0V
-56V0-p
-28V
R1054
1K
C1055
1000P
500V
L1055
82n
R1056
68
1/2W
S1001
TAGDSP201
N351
kR
kG
kB
R1154
1K
C1155
1000P
500V
L1155
82n
R1156
68
1/2W
S1101
TAGDSP201
R1254
1K
L1255
82n
R1256
82
1/2W
C1255
1000P
500V
S1201
TAGDSP201
79V0-p
0V
41V
4.0Vp-p
400.0V
h
h
g1
g2
g51
g52
a
⑥ EHT
C1366
1000P
L1360
TSK8029
C1373
1000P
500V
D1356
TAGDSP141
D1355
ERZTC4AK201U
C1371
220P
500V
C1372
220P
500V
D1360
TAG10003
C1301
3300P
2KV
N1016
①
C1305
1000P
C1304
0
C1302
100P
500V
L1358
TSK8029
L1356
TSK8029
C1306
C1396
1000P
500V
R1350
2.2M
1/2W
⑥ g52
⑥ g51
R1358
39
1/2W
C1357
2700P
2KV
L1351
TSK8029
N651B
①
⑥ g2_B
D1368
MA188
800.0V
R1368
820K
3.5V
R1363
4.7K
R1362
22K
R1365
22K
D1358
MA704
D1359
MA111
R1398
220
② ABL_CONTROL
R1371
68
6.0V
5.5V
R1361
270K
C1356
0.01
2.0V
C1351
10
50V
R1356
1.2M
1/2W
R1351
4.7K
Q1351
2SB1220QR
11.6V
11.7V
N1017A
R1370
10K
R1355
10K
R1352
1.5K
R1357
200K
±1%
⑥ GND
⑥ GND
6.2V
IC1351
LM324M
10.4V
14 13 12 11 10 9 8
1 2 3 4 5 6 7
R1366
5.6K
D1351
DTZ9R1C
D1363
HZT33.09
D1357
EU02Z
R1360
1K
10.4V
R1377
Q1354
2SC4632
5.9V
3.8V
3.8V
R1384
59.0K
±1%
2.4V
2.4V
6.7V
R1379
470K
Q1353
XDC114E
C1352
0.1
250V
D1354
HZT33.09
R1354
88.7K
±1%
R1367
5.6K
0.0V
R1376
18.2K
±1%
R1369
10K
C1355
1000P
Q1352
XDC114E
R1353
55K
1/2W
-53.0V
R1359
0
1/8W
BLANKING
R1386
6.98K
±1%
R1388
3.3K
R1312
6.8K
D1366
MA4330M
C1359
0.068
50V
C1353
22P
R1387
12.1K
±1%
D1363
MA111
Q1356
2SC3757
R1385
4.7K
R1311
6.8K
D1362
MA111
Q1355
2SC3938
D1367
MA4330M
+195V
GND
ABL
FOCUS
g1_B
N1010A
23 24 25 26 27
① ① ① ① ①
TNPA0140X
-17V0-p
2.0V
28.0Vp-p